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ISSUE 7
MAY 1992

PC review

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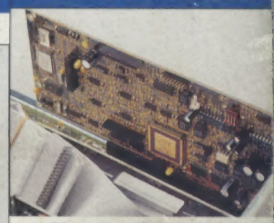

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Inside the Bitmaps' Magic Pockets

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The Lure of the Temptress

Tricks and tactics in Monkey Island 2

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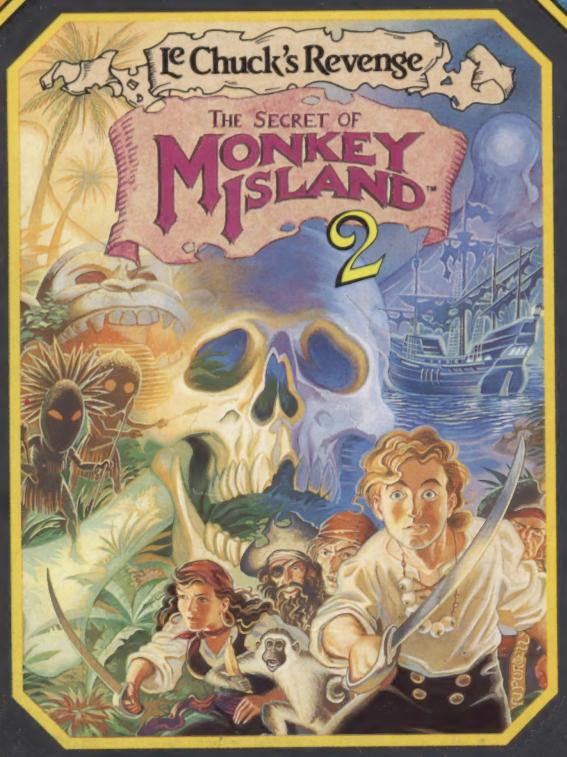

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Screenshot from PC

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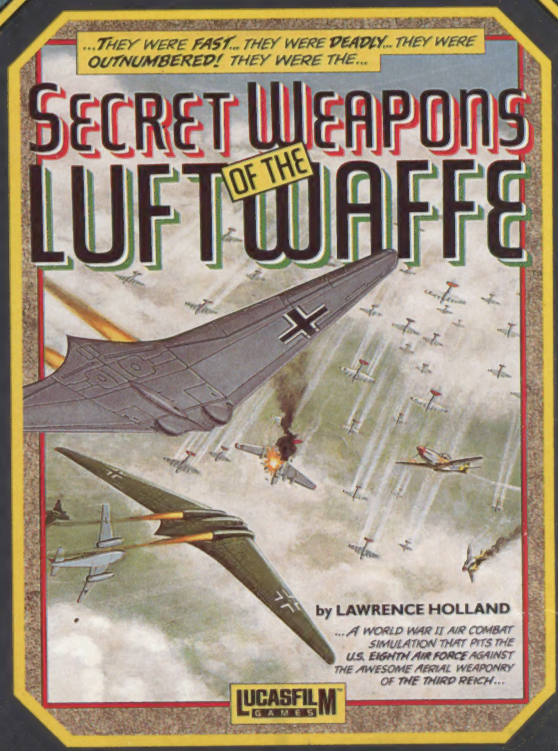

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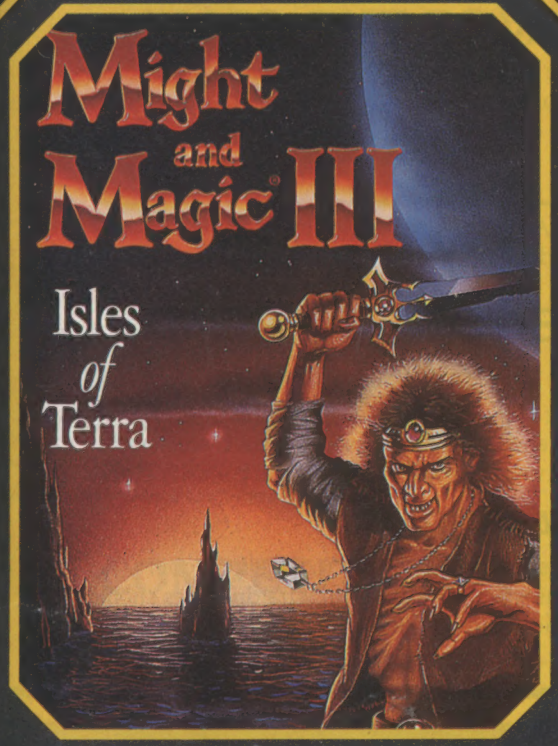

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NOTE: Former experience with previous Might and Magic's not required.

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Screenshot from PC

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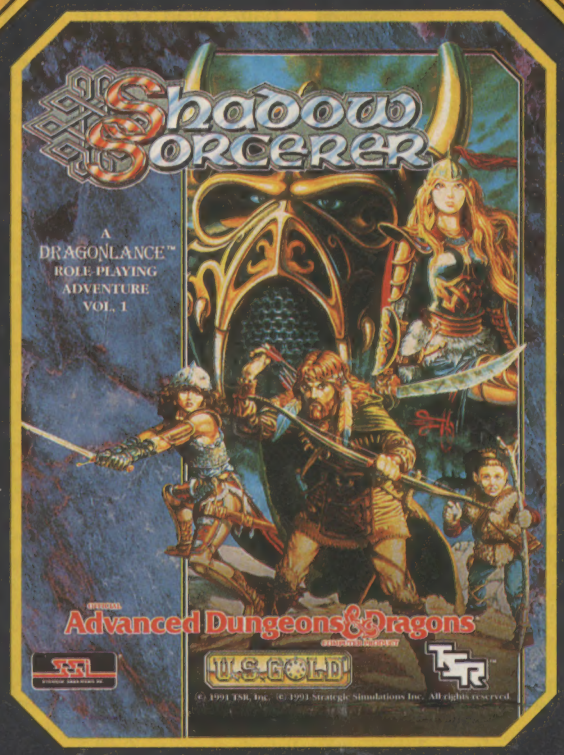

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Screenshot from Atari ST

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Screen shots are only intended to be illustrative of the gameplay and not the screen graphics which vary considerably between different formats in quality and appearance and are subject to the computers specifications.

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IN THIS ISSUE
Welcome to a bumper edition of PC Review – 164 pages worth of the latest and the best in PC entertainment. One way in which we've taken advantage of the extra pages is to enlarge the tips section dramatically, with eight pages of hints, maps and solutions. You should also have an extra free gift this month, with a set of disk labels on the cover, which I hope will prove useful – they're already a godsend to us in the office.

IN-FLIGHT ENTERTAINMENT
Flight simulations and PCs might have been made for each other; there's no other computer format with the same range of flight sims available, and the choice can be bewildering. That's why we asked Peter Worlock, who has many thousands of hours of sim flying experience behind him, to put together this issue's guide to the genre. We've made it as easy as possible for you to find a flight sim suited to you by dividing the games into categories according to the type of aircraft you get to fly, and noting which of the programs are technically-based, and which are more entertainment-orientated. If there is one single theme which crops up again and again in our Q&A pages, it's questions about upgrading the processor of your PC or adding an accelerator board – anything to make it go a bit faster. If you're confused on this subject, take a look at Peter Gloster's article on page 30, where he explains the ins and outs of processor upgardes, and clarifies just what is and isn't possible for your PC.

Christina Erskine

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Free cover disk and disk labels
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SHAREWARE 139
Good software doesn't have to be expensive, as you'll see if you dip into our comprehensive shareware guide. You'll find a list of recommended titles, each one described in detail, and an exclusive order form.

PC review

PC Review Issue Seven May 1992
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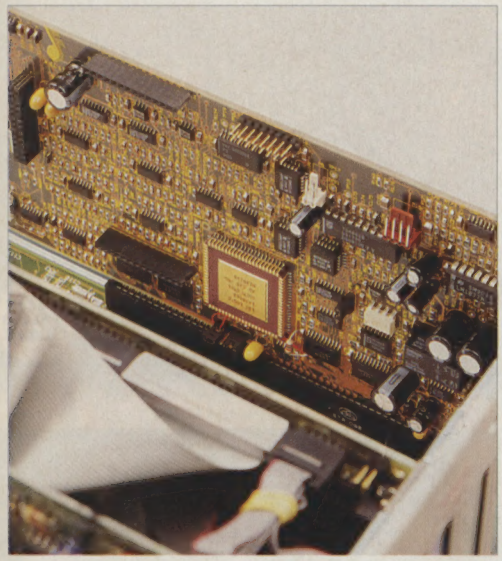

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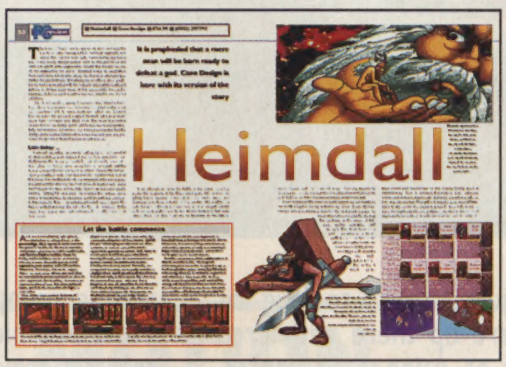

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News

LOGITECH LAUNCHES SCHIZOPHRENIC MOUSE

It's difficult to know whether Gravis's PC Mousestick is a joystick which thinks it's a mouse, or a mouse which thinks it's a joystick – but whichever way you look at it, this is one peripheral that can do the work of two.

In technical terms, the PC Mousestick is basically Gravis's award-winning advanced joystick (complete with three adjustable buttons and an adjustable and comfortably padded shaft) with two optical encoders built in, allowing it to be used as both an analogue stick and a three-button bus mouse. Practically, this means that you can combine work and pleasure uses into one peripheral – and save desk space into the bargain.

Retailing at £89.95, the package includes a combined bus mouse card and game card and a complete set of utility software which includes both DOS and Windows mouse drivers. Other bundled software includes two diagnostic programs and a copy of the PD platform game, Commander Keen: Episode One.

Users who fill in and return the accompanying registration card can also choose another game from the following five: Velocity's Jet Fighter, Lucasfilm's Night Shift, Electronic Arts' Powerdrome, Broderbund's Prince Of Persia, or Ski Or Die, once again from Electronic Arts.

Commenting for distributor RC Simulations, managing director and flight sim enthusiast Bob Sidwick had this to offer: "The PC Mousestick is arguably the most accurate and sophisticated controller available. It's ideal for flight simulations – it really makes the difference between landing and crash landing... just try it out in its mouse mode with Falcon 3.0."

Because the Mousestick connects into the card's mouse port, this leaves the game port free for another joystick, making it an ideal controller for games such as Gunship 2000 and Flight Simulator v4.0 which make use of twin-joystick set-ups.

In mouse mode, the device can be used in any one of three configurations: direct tracking, vectoring and a combination of the two.

The PC Mousestick is available now and carries a year's 'no nonsense' warranty. Further information is available from RC Simulations on (0272) 550900, or direct from Gravis' UK affiliate Logitech on (0344) 891313.

WORLD IN MOTION

Fed up with the world's ever-changing political climate rendering your atlas redundant almost as soon as you've placed it on your bookshelf? Well worry no more, as PC Globe has just announced version four of its imaginatively titled PC Globe program, which includes (among other enhancements) the new unified Germany.

And although the current shifts in power in the former Soviet Union haven't made a dent on this latest upgrade, plans are afoot for the program to be updated every 12-18 months from now on, so the CIS (or whatever they call it) should make it into the next one.

Other enhancements in this latest version include climate charts and the inclusion of flags and national anthems alongside the existing and extensive database which incorporates information on languages, ethnic groupings, age distribution and more.

Priced at £49.99, PC Globe v4.0 is marketed in the UK by PC Connections, "a direct marketing organisation specialising in providing innovative products for the IBM PC and 100 per cent compatibles." Which brings us to one of the company's non-software products, which fits nicely into the "how did we ever do without it?" category.

For those of you who are prone to repetitive strain injury (RSI), comes the 'Accu-Back', a (would you believe?) wrist supporter which sits in front of your keyboard to keep your hands at a comfortable level. Measuring 18" wide by 10" deep and 1.5" high, the Accu-Back carries a suggested retail price of £24.95 (all quoted prices are exclusive of VAT).

PC Connections can be found on (0706) 222988.

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TAKING THE MICHELANGELO

The supposedly deadly Michelangelo virus which was set to hit PC users worldwide on Friday March 6th, the 517th anniversary of the artist's birth, came and went without causing the expected mayhem (so great was the anxiety caused that one American expert predicted that it would bring five million computers to a halt).

In the end, Scotland Yard's Computer Crimes Unit only reported two incidents in Britain: one in South London and the other in Tyne and Wear. Elsewhere in the world, South Africa was hit most seriously (with 1,000 computers spread across 450 companies losing all of their data), while other outbreaks were reported in Australia and Yugoslavia.

What Michelangelo did achieve, however, was to bring the subject of computer viruses to the attention of the national media and provoked mild panic among the general public.

PC users who are still worried that their machine may be liable to catch a virus can greatly reduce the risk by adhering to the following procedures: never introduce a strange disk to your drive without checking it first (there are numerous virus checking programs available, both commercially and in the public domain), regularly scan your hard disk using the same technique and regularly update your virus checking software (for more on this subject, check out Rob Beattie's article in Issue 4).

FRENCH FANTASY

Gallic software house Simarils, whose products are now marketed in the UK by Daze, has announced its first compilation.

Called Fantasypak, it will include Colorado, Crystals of Arborea, and Boston Bomb Club, and should be available soon for just £19.99.

More details on 071 490 2944.

ARSENAL SIGNS WITH THALAMUS

Soccer games will never be the same again, as software publisher Thalamus has announced a game based on North London First Division team.

The red and white shirted team has shown the developers great support by allowing them constant access to Highbury.

Combining features from both management and on-field action – Arsenal F.C. The Computer Game will also include all domestic and European cup competitions.

Contact Thalamus on (0734) 817261.

SPORTING DOUBLE FOR AUDIOGENIC

England's recent sporting revival is being closely mirrored by two games which are currently under development at Audiogenic's Harrow offices.

Firstly, and only just in time to catch the wave of feeling following the England rugby team's record-breaking double 'grand slam', comes World Class Rugby – The Five Nations Edition (or Five Nations Rugby, as it's more commonly known).

Available now, the game features the current squads from all five nations which took part in the recent tournament, along with the other teams which competed in last year's World Cup.

The action is seen from one of three selectable views – normal, 3D perspective and 'blimp' (where the player can see most of the pitch from a far-off position) – and features all of the game's key aspects: tackles, scrums, line-outs, penalties, conversions and so on.

And moving from rugby to the other sport where England has been showing some prowess of late, the summer of this year will see Five Nations Rugby joined by the long-awaited Graham Gooch World Class Cricket, which will hopefully be available in time for the Pakistan team's tour.

Endorsed by the most famous Essex man there is, World Class Cricket will feature a full arcade rendition of the game alongside a number of strategic elements. Details of both games are available on (081) 424 2244.

CAPSTONE CASHES ITS CHIPS

Those of you who enjoy the distinctly dubious pleasures which can (allegedly) be derived from gambling for no stakes whatsoever may be interested in a multi-game betting package due shortly from Capstone (distributed by Accolade, on (081) 877 0880.

Casinos of the World brings together three previously-released gambling programs – Vegas Gambler, Monte Carlo Baccarat and Trump Castle.

Vegas Gambler pays homage to America's temple of neon and tack in the Nevada desert, allowing you to take on the one-armed bandits or dabble in a little Blackjack, Video Poker or Roulette.

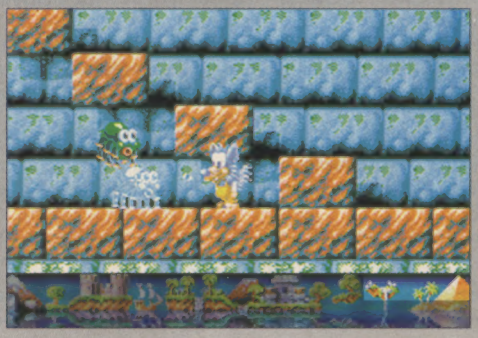
As you'd expect, Monte Carlo Baccarat transports the 'action' across the Atlantic and allows you to try your hand at Chemin de Fer.

Finally there's Trump Castle (subtitled "The Ultimate Casino Gambling Simulation") which is set in troubled Donald's Atlantic City empire.

In fact, the only money which is likely to change hands as a result of this package is the £34.99 it will cost you in the shops.

IN BRIEF

RENEGADE DISCOVERS FIRE



The latest developer to crawl from the wreckage of Mirrorsoft (see news, last issue) is the Essex-based team Graftgold, whose Fire And Ice strategy epic has been signed to Renegade.

Commenting on the acquisition, Renegade boss Tom Watson said: "Right from the start, Renegade has been committed to publishing only the best of original product – and Fire and Ice certainly fits that bill."

The only previous Renegade title

ONE MORE FOR THE ROAD

NextBase has announced the latest upgrade its Autoroute Plus road-finding package.

Featuring the latest digital map of Great Britain, Autoroute Plus v5 also adds a number of new functions to the established route-finding and planning formula, not least of which is the multiple journey feature which will plan up to 75 trips at once.

Other innovations include the integrated database of 8,700 postcode sectors. New maps of Germany and Benelux can also be used in the program, along with updated maps of France, Europe and the USA.

Autoroute Plus Version 5 is available now, priced at £395 (exclusive of VAT), while existing users can upgrade for £75 (once again, VAT exclusive). A cut-down version, Autoroute Express, is currently available for £50 (with an upgrade due in July).

NextBase is on (0784) 421422 with further details.

CD BECOMES VIRGIN TERRITORY

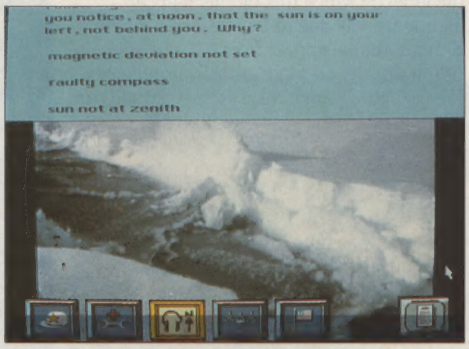
Virgin Games is to make a strong entry into the fledgling PC CD-ROM software market with the release of numerous titles over the next three months.

This month will see the release of compact disc versions of The Magnetic Scrolls Compilation, Wonderland, The Zork Trilogy, The Infocom Collection, Supremacy and North Polar Expedition; while Shuttle is scheduled for a May release and Realms is set to appear in June.

Of these, only the educational North Polar Expedition is a completely new title, while Supremacy and Shuttle will be graced with enhancements to take advantage of the new format (the latter will also come with a bundled Space Encyclopedia).

Prices vary between £29.99 for The Zork Trilogy and £116.33 (£99 plus VAT) for North Polar Expedition.

On more conventional formats, Virgin is currently bursting with pride over the take-off of the recently-released Shuttle (reviewed Issue 5) which it claims has become its biggest seller yet in PC terms.



Marketing manager Andrew Wright commented that Shuttle: "... has taken two to three years to develop – and a lot of money – so it's great to have our best first day sale." Those of you who haven't yet bought the space-based simulation may be interested to hear that there's a `limited edition' version available which includes a free NASA video with the title – more details on (081) 960 2255.

ON YER BIKE SIR CLIVE

Distant, but still rib-tickling, memories of the ill-fated C5 came flooding back at last month's Cyclex show (held at London's Olympia), as Sir Clive Sinclair revealed his latest brainchild, the 'Zike'.

Designed, conceived and manufactured in the UK, the Zike ('zero-emission bicycle') is an electric cycle which can reach speeds of up to 12 miles per hour (phew!) and may be ridden by anyone over 14 years of age without a licence or road tax.

The contraption works in three modes: under full electric power, the Zike does all of the work and runs for roughly 30 minutes; mode two (motor and light pedalling) extends the range to roughly one and a half hours; while mode three sees the rider pedal with assistance from the motor to avoid strain – this increases the range to between two and three hours.

It's estimated that a complete battery recharge will cost the user only 1p, while a specially developed 'regenerative braking system' also tops up the power levels while the Zike's in use.

Gushing enthusiastically about his new baby, Sir Clive said, "... major breakthroughs in materials, motor and battery (both concealed within the central bar) had facilitated for the first time an electric bicycle design at once attractive, cost-effective and efficient. The result at just 11kgs (under 25lbs) is as light as a typical racing bike."

The machine is to be manufactured for Sinclair Research by Tudor Webasto and replaces traditional steel with aircraft-grade light alloys and ultra high-strength composites. The firm hopes to produce 10,000 Zikes a month in the second half of this year.

Prospective 'zikelists' can pick up one of these dream machines for £499, a price which includes Vat, a portable high-speed recharge unit (complete with plug!) and postage. However, a large carrier basket is an optional extra at £25.

The Zike should be hitting the streets by early June at the latest. All enquiries to Sinclair Research on 071-636 4488.

to make it to the PC was the highly-acclaimed Gods (reviewed, Issue 4) although this is soon to be joined by Magic Pockets (see Coming Soon) and a re-release of Cadaver (previously on the Image Works label). This last will include the original game and the four levels which were released as The Pay-Off on Amiga and ST, but never made it to the PC.

Details of these and other Renegade developments can be found on (071) 481 9214.

VIRGIN SPREADS

● Richard Branson continues to reach out into the furthest corners, as Virgin Retail has announced plans for two new Virgin Games Centres – one in Falkirk and another in Dublin.

The two new stores, which will open this month, are part of an ongoing expansion plan to have 25 Games Centres in operation by the end of 1992. Product manager Gerry Berkley said, "We have targetted towns in the UK which have the right size population for a Games Centre, and we will be opening Games Centres and Megastores in the same cities.

END OF THE ZOO

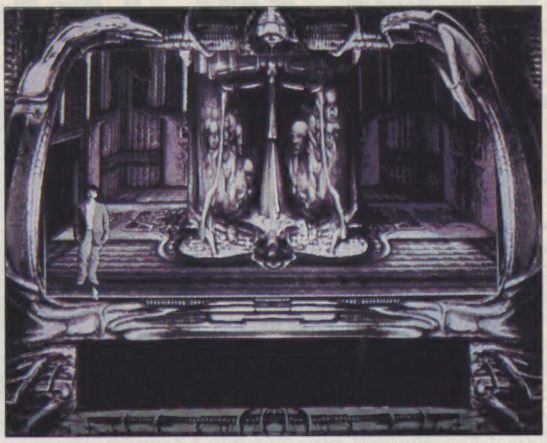
● European Electronic Zoo, the software house behind the (very average) Geisha and Subbuteo, has ceased trading as a company, citing the difficulty of gaining payment from debtors for its plight.

MIRAGE APPEARS

Those of you who were intrigued by the recent appearance of Darkseed (Issue 5) may have been a little puzzled by the label on which this biomechanical nightmare was due to be released – where did this Mirage appear from?

Well wonder no more, as this month sees the mystery cleared up: Mirage is actually an all-new, Manchester-based publisher set up by PC veteran Peter Jones, who cut his teeth with MicroProse before leaving last year to head up the Sierra On-Line operation on these shores.

Never one to hide his light under a bushel, Jones has launched his new venture with the declaration that the firm aims to be "... the biggest European-based software publisher within three years," and has announced the first games which he hopes will take him towards this goal.



Darkseed, written by US company Cyberdreams, is the first release from new software publisher Mirage

The new range is unusually diverse in style, although this is obviously something that Jones has aimed for. "We want to run through the whole spectrum of games," he says. "Even now we're talking to RPG and adventure creators. Actually, what we'd really like to be is like Sierra and MicroProse put together ... only 10 times better."

First to make an appearance will be Mirage's "answer to Lemmings"... Humans! The gameplay will be similar in style to the Psygnosis classic, in that the fate of a number of cute and diminutive characters will be in your hands, only this time you'll also be responsible for their evolution.

Programming team Imagitec is currently beavering away to meet the May release date.

However, all of Mirage's output won't be in the hands of outside development teams. The game which will immediately follow Humans on to the shelves, Ashes Of Empire, is being developed by the firm's own team of programmers.

Jones describes this one as "... a massive 3D effort which is an adventure game first and a strategy game second."

Set in a politically complex union (which is uncannily close to the former Soviet Union), the object is to prevent the imminent civil war – and the inevitable nuclear holocaust which would follow – by diplomatically manipulating the 28,000 characters which the game contains.

An all-new 3D modelling technique has been employed so that more than 600 of these characters actually appear to be individuals, possessing completely unique facial features.

Set for an early June release, Ashes Of Empire should be just the ticket for those of you who've explored the Midwinter series to exhaustion.

Last, but not least, in Mirage's debut catalogue is another strategy game, although it could hardly be more different from Ashes Of Empire.

Ragnarok is essentially a computerised rendition of an ancient Viking board game, The King's Table. Although it's superficially similar to Chess (and the computer version similar to Interplay's Battle Chess), Ragnarok actually revolves around a power struggle between four gods. In terms of gameplay, Jones describes this unusual offering as being "like Battle Chess only 10 times better. It's got all of the sophistication of chess while being a faster and more stimulating game."

Like Humans, Ragnarok is currently under the watchful eye of the Imagitec team. Further details of this and all other Mirage titles are available by calling (0260) 299401.

CARMEN'S COMEBACK

Where On Earth Is Carmen Sandiego? Well you may ask! As Broderbund's legendary 'edutainment' series has had a more stop/start career than the average London bus.

Now however the arch criminal with a taste for educating her pursuers will be making a return to the PC when Electronic Arts re-releases the entire series sometime later this year.

Although Electronic Arts hopes to repackage the series for the European buyer, each of the titles will still come complete with a related reference book.

"We're re-releasing the Carmen Sandiego series because we feel that it didn't make the impact which it should have done before," says Jeffrey. "The idea of including the books is that kids get to use reference material while they're having a good time."

Before the return of Carmen however, the EA/Broderbund tie-up will produce three other titles: Kid Pix (see Issue 1), Patton Strikes Back (Issue 2) and the user-friendly utility program Print Shop Deluxe, which allows the user to produce banners, posters, invitations and so on from a standard PC. "We haven't seen anything of that one yet," says Jeffrey, "but we're waiting on tenterhooks for it to come over from the States. We have very high hopes for it."

Share Jeffrey's enthusiasm by calling (0753) 549442.

SPORTING ACCOLADES

Accolade has adopted a sporting theme for the three releases due at the end of this month – although it would be difficult to imagine three more different sports covered than golf, baseball and Formula One Grand Prix Racing.

Jack Nicklaus' Golf & Course Design: Signature Edition is one of a long line of Accolade games tied in with the former 'greatest golfer in the world'. Decked out in 256-colour VGA, the game includes numerous new features including digitised players and crowd responses.

Another sequel, Hardball III, is the latest in another long-running series, this one recreating the thrills and spills of America's most popular sport, baseball. Once again VGA and upgraded gameplay are promised.

And although the final part of this trio isn't strictly speaking a sequel, it is another link in a chain that leads back through Accolade's infamous Test Drive series. Not only does Grand Prix Unlimited feature the familiar driving theme of those games, but it also shares their designer in Tom Loughry.

Combining a course editor with near-unlimited car adjustment, Grand Prix Unlimited has attracted the endorsement of America's top motoring magazine, Road & Track.

Jack Nicklaus' Golf will cost £39.99, while prices have yet to be decided for the other two games. Call Accolade for more details on (081) 877 0880.

Image created by Bekayla and John Dewar, ages 6 and 4.

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Brøderbund

SSI OFFERS MAGIC AS GOLD CLUES UP

Strategic Simulations Inc, the American RPG specialist distributed in these parts by US Gold (call (021) 625 3366), has announced its latest 256-colour fantasy-based role player – Jaimi McEntire's Tales Of Magic: Prophecy Of The Shadow.

Incorporating over 100 digitised scenes and animations, TOM:POTS will allow the player to communicate and converse with over 50 characters throughout the course of a 40-hour plot via the now-standard point and click interface.

Due to hit the streets later this month and priced at £35.99, Tales Of Magic will support both AdLib and Sound Blaster cards and will require at least 640K of RAM (a hard disk is also recommended).

And on the subject of US Gold and RPGs, the ever-helpful Birmingham-based publisher has announced a series of additions to its catalogue of clue books.

Either just released or due in the very near future are helpful volumes for SSI's Buck Rogers 2, AD&D's Eye Of The Beholder 2 and Pools Of Darkness, Might And Magic 3 from New World and The Secret Of Monkey Island 2 – LeChuck's Revenge from Lucasfilm.

The full line-up of hint books for US Gold's affiliate labels (which are available from most software shops, retailing between £4.00 and £8.99) is now as follows: SSI – Buck Rogers; AD&D – Champions Of Krynn, Curse Of The Azure Bonds, Death Knights Of Krynn, Dragons Of Flame, Eye Of The Beholder, Gateway To A Savage Frontier, Heroes Of The Lance, Hillsfar, Pools Of Radiance, Secret Of The Silver Blades and Shadow Sorcerer; Lucasfilm – Indiana Jones And The Last Crusade, The Secret Of Monkey Island and Zak McKracken And The Alien Mindbenders; New World – Might And Magic 1, Might And Magic 2 and Tunnels And Trolls.

Further clues and hints for most of the above are also available through a series of telephone hintlines, an index of which can be found on 0839 654124.

GAMES AT SHOPPER SHOW

The Spring Computer Shopper show opens at Olympia in London on May 28. Already established as an excellent place to pick up bargain PCs, software and peripherals, this year's event will also feature a much expanded entertainment section.

The grandiosely-styled Games Arena Experience will feature some of the latest software for visitors to try out, with Domark, Electronic Arts and Ocean all interested in making titles available. Details on the show from Blenheim PEL on (081) 742 2828.

ELONEX HITS THE FAST LANE

Prolific PC producer Elonex continues its bid for global domination this month with the announcement of yet more changes and addition to its hardware line-up.

The direct supplier's 'modular' range (where the machines' architecture is upgraded by simply swapping one processor card for another) now begins with a 33MHz 386SX model (which includes a 50Mb hard disk, two megabytes of RAM, SuperVGA monitor and Windows 3 and sells for £925 plus V.A.T.) and goes right up to the 50MHz 486DX-based PC-450.

Marketing director Ari Gershuni commented: "Even if all of the other benefits of our upgradable architecture were to be discounted, Elonex's ability to use modularity to bring new processor developments to market in a matter of weeks rather than months proves its worth." More talk of this nature on (081) 452 4444.

● *For more on processor upgrades and upgradable PCs, see this issue's First Steps article on page* 30.

IN BRIEF

PC HITS TV

If Channel 4's Gamesmaster is a little bit (how shall we put this?) 'young' for your tastes, then you may be interested to hear that the BBC is planning its own software show, cunningly dubbed ... The Software Show.

Unfortunately though, the description circulated by the Beeb's press office doesn't bode well for the PC games enthusiast, as the show is expected to "cover everything viewers need to know about harnessing computer software for profit."

The good news though, is that numerous prizes, including laser printers, software and even PCs will be on offer during the series. More news on transmission dates and the like as we get it.

KEEP ON RUNNING

It may not be too late to get yourself into shape for Barcelona, as MDS Software (on (0323) 442682) has announced the arrival – direct from the US – of The Athlete's Diary.

AIRBORNE PHILIPS IGNORES PCS

Hardware giant Philips is to continue its successful flight sim promotion, where the firm includes a copy of MicroProse's F-19 Stealth Fighter with every CM8833/II monitor – but has chosen not to include PC users in the deal!

Despite the fact that the monitor is compatible with most PCs (including laptops and notebooks), the bundled software will only run on either Commodore's Amiga or the Atari ST.

This inexplicable decision brings a whole new meaning to the promotion's 'Totally Unreal' title. Disgruntled users can contact Philips on 081-689 4444.

PRINTER PRICES PLUMMET

If you've yet to treat your PC to its ultimate partner (after all, a computer without a printer is like a bike without a saddle), then this might be just the time to do it, as one major manufacturer announces reductions in the prices of its machines, while another has introduced a new low-cost range.

The price cuts come from Seikosha, which has announced the reductions mainly across its range of 24-pin dot matrix models. According to the firm's UK general sales manager, Gareth Cornish, "Recent increased demand across Europe has enabled the company to pass on savings directly to the consumer."

At the lower end of the scale, the SL92 (an 80-column, 240 character per second machine) has changed its name to the SL92 Plus, been upgraded to include seven extra fonts and has dropped in price from £335 to £280, while the LT20 (a 180 cps portable model) is reduced to £299 from £369.

Cheaper still is Epson's latest 24-pin letter quality printer, the LQ-100, which comes in at £245 and features scalable fonts (from 8pt to 32pt), 72 cps in letter-quality mode (200cps in draft), 360 dots per inch high-resolution graphics, an internal 50-sheet paper cassette and a noise level of only 50 decibels.

"The design of the LQ-100 is based on direct customer feedback through market research," claims Epson product manager Tony Dowzall. "This has enabled us to identify the needs of the home user and deliver a product that meets those needs."

Alongside this traditional dot matrix printer, Epson is also releasing two ink-jet models, the SQ-870 and the SQ-1170, which will retail at £659 and £899 respectively.

If you already have a dot matrix printer and would like to extend its ribbon life, then the newly-released MaxiPrint kit could be for you.

Developed in Singapore and distributed in Britain by Norwich-based Quill Marketing, the award-winning ribbon re-inker allows any type of ribbon to be re-inked up to 50 times at a cost of 30p a time.

Priced at £33.45, the kit includes two ink cartridges, but comes without the optional motor-wind which is available separately from Quill.

For further information, contact Seikosha on (0753) 685873, Epson on (0442) 61144 and Quill Marketing on (0603) 746970. Please note that all of the above prices are exclusive of VAT.

Developed in California by Stevens Creek Software and designed to run on any PC, this computerised training diary logs up to eight sports of any type and calculates pace, totals, averages, graphs, personal bests, race predictions and equipment use.

The Athlete's Diary is available now, priced at £39.95.

CD-I IN SHOPS "THIS MONTH"

Philips' long, long-awaited CD-I system should finally reach the shops at the end of this month, when first machines from the production line will go straight into the stores.

"Cruise for a Corpse was murderously good, The Secret of Monkey Island sent everyone ape, but now 'point and click' graphic adventures are set to undergo a REVOLUTION"

{AMIGA FORMAT}

...All real change must come through revolution...

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PC review On a Screen Near YOU

Title: **Magic Pockets**
Developer: **The Bitmap Brothers**
Softography: **Xenon, Xenon II, Speedball, Speedball II, Cavader, Cadaver: The Pay Off, Gods**
Genre: **Platform Game** Publisher: **Renegade**
Release Date: **May** Price: **£TBA**

Improved conversion of top Amiga and ST platform game.

Magic Pockets

Love them or hate them, the one thing that has to be said for the Bitmap Brothers is that they know the difference between a good game and a bad one. Unlike many other developers, they have yet to insult PC owners by churning out bad conversions of good ST and Amiga games, and on the basis of Magic Pockets, there is no sign of them doing it in the immediate future.

If you haven't yet heard of the infamous Bitmap Kid, then let me tell you that the little so and so made his debut in a special game for ITV's Motormouth and is now the star of Magic Pockets. The plot concerns all of the kid's toys becoming lost in his infinitely deep pockets. He has to get them back of course, but the only way to do this is to climb inside and enter the strange worlds within.

Like Gods, the Bitmap Brothers' earlier PC platform game, Magic Pockets breaks away from the jump, shoot and run mould. The way that the Kid uses the weapons at his disposal, for instance, allows for a greater variety of gameplay than you'll find in other platform games. On the first level he throws whirlwinds, which can be powered up to create bigger whirlwinds. Each of the creatures in the game has a particular number of hit-points, and the larger the whirlwinds are, the more hit-points they destroy.

Larger whirlwinds can also be used to trap creatures, and if they are subsequently burst by the Kid hitting them, they will turn into bonuses and power-ups. Even these show the usual Bitmap Brothers' inventiveness; the caffeine-filled coffee cup, for example, gives you fast fire.

Walk into a whirlwind and the Kid will be sent into a furious spin which will catapault him in the direction he is going. Not only is this useful for reaching otherwise inaccessible places, but the Kid is invincible while he is spinning. The Kid will also go into a spin if he falls too far.

Weapons take on a new twist on the second level, in which whirlwinds are replaced by clouds. The Kid has to use these as temporary platforms to get to certain areas. They also produce raindrops and, if correctly positioned, can be made to grow new platforms. This adds a whole new element to the gameplay on this level.

One example of the way the PC version has been improved over the original 16-bit versions is the TV set. This feature is a mapping device which enables the Kid to see twice as much of the surrounding area. On the ST and Amiga this effect was achieved using a shrink table. This told the program how to draw the background and each sprite using half the usual number of pixels. On the PC the game utiltises a high resolution mode so that a larger area can be displayed without losing any detail.

Watch out for the bubble. If you take too long with a level it will catch up with you and drain all your powers.

The sub-games are as entertaining as the general action. In this one the Kid has just taken a severe beating.

Another example of attention to detail is in the animation of some of the creatures. The bats, for example, actually look as if they are flying. They have a very bat-like bobbing motion as they move. If you stun one it will stop flapping and consequently fall towards the floor.

As with Gods, there is a level of artificial intelligence built in. Initially creatures will march dumbly back and forth, but at later stages thay become more devious in their attempts to attack you.

The toys, when found, become the basis for the end of level sub-games. The first toy is the bike, but when initially dicovered it is being ridden by a rock man. The bonus sub-game is actually a bike race, in which the Kid races against the rock men.

Although the sound has not yet been implemented, the effects will be created by Richard Joseph. Additional music is a possibility and the intro music will be the same as that used on the Amiga and ST. Taking adavntage of the Renegade-Rhythm King relationship, this is a Betty Boo track with the samples stripped out of it.

If you thought that PC wasn't a good machine for action games, think again; the Bitmap Brothers are not only creating a worthy conversion of Magic Pockets, they have even improved on the already excellent Amiga and ST versions.

KIDS STUFF

Being a bit of a smart cookie, the Bitmap Kid has several clever tricks up his sleves (or should that be in his pockets).

Ice Cubes

If his enemies on level three get a little heated, the Kid can cool them down by trapping them in a giant ice cube.

Bubble Gum

How resourceful! Give the Kid a piece of bubble gum, and it becomes a useful mode of transport.

Space Hopper

The space hopper is just one of the unusual ways of getting around that the Kid comes up with

PC review On a Screen Near YOU

Title: Lure Of The Temptress
Publisher: Virgin Games
Genre: Graphic Adventure
Programming Team: Revolution Software
Release Date: May/June
Price: TBA
Softography: n/a

Britain's entry into the world of graphic adventures

Lure Of The Temptress

It's often been said that if you want a really high quality adventure on your PC, the only place you should turn to is the States. The likes of Sierra, Dynamix and Lucasfilm have been topping the charts with King's Quest V, Heart Of China and the ground–breaking The Secret Of Monkey Island since the beginning of time (or so it seems). The one recent exception to the rule has been French frontrunners Delphine, with Future Wars, Operation Stealth and most recently Cruise For A Corpse. But until now there hasn't been anyone in England with the same pedigree in interactive graphic adventures.

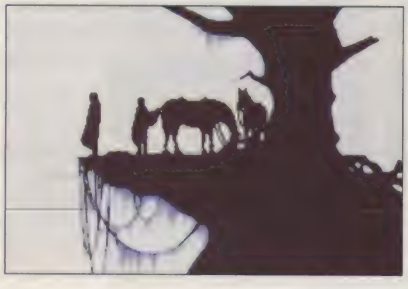
Revolution Software is the company that's taken the mantle of British adventure games on to its shoulders, with Managing Director Charles Cecil at the forefront. Having risen from the ashes of Activision and taking fellow employees Tony Warriner and David Sykes with him, Charles confidently expects his revolutionary (pun fully intended) Virtual Theatre system to make a lasting impact with adventure gamers worldwide. "There's been a lot of interest in Germany and France, and the Japanese were very, very excited by it. We've also had a lot of interest from American publishers, a hell of a lot of interest. When the Mirrorsoft problems happened, we got a nice presentation from an American company who was very keen to publish it. Virtual Theatre has created a lot of interest and the reason is because it's got new concepts. It's a tried and tested theme, but it's been done in a new way."

Virtual Theatre works on two levels, object manipulation and character interaction, with strong emphasis on the latter. Everyone within the game has their own separate lives, wandering around the various locations, performing actions you'd expect of them, rather than behaving as they would in traditional adventures, i.e. staying in one place and performing one function to carry the plot."By forcing people to have character interaction you add an extra depth to the game," Charles explains, "you actually believe the characters. What we're aiming to do is build up a 'reality', a real world, which is where the name Virtual Theatre came from." This reality is further enforced by the very behaviour of the characters themselves. If left alone in a bar, for example, your young sidekick will wander around, chatting to people (which you'll be able to hear if you're in the vicinity), asking the barmaid for a drink and cracking jokes. You can follow people around and just watch them perform functions. You can even ask people to do things for you, then watch them carry out your requests. Windows can be Looked Through to reveal situations and you can watch anyone that enters the room go about his or her functions. Virtual Theatre feels very, very real.

As we reported back in issue one, Lure Of The Temptress will be the first title to use the Virtual Theatre system. You control the actions of young Diermot, a peasant lad that was caught up in a battle between a king's army and a race of malevolent creatures known as Skorls. Diermot is imprisoned by the Skorls and left to rot. It's up to you to escape from the cells, make your way into the overrun town and find a way to free it of the Skorl influence. The player controls the action solely with the mouse, left clicking on objects to Look At them and right clicking to bring up a menu of appropriate verbs for each object, person or area.

The bulk of the adventure takes place in the town, made up of around 25 locations and 15 characters (the numbers are still a little shaky as things are constantly being changed before the release), all of whom can interact with each other. The town is currently running in 16–colour EGA and contains a constant Roland-generated backdrop of noise (dogs barkings, faint conversations etc.). The finished game will contain both EGA and 256-colour VGA modes

The intro sequence is very stylish, using little more than two or three colours on some screens. With a thumping soundtrack provided by a sound board, it's a visual and audio delight.



What you see here are some of the 16-colour sprites for the EGA versions of the game (these two being the town blacksmith and one of the invading Skorls).

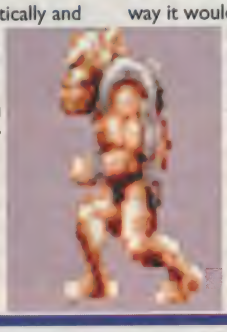
Throughout the game you have a constant companion, sidekick and general manservant in the shape of Ratpouch. This extra character has allowed Revolution to include some clever 'two-character' puzzles.

To add to the 'real world' feel, the characters in Lure all behave independently. To accent this, you'll often see them just wandering around talking to each other. If there's already speech up on the screen, you'll see these speech bubbles appear, indicating that the character is chatting away.

and will support all major sound boards with Ad Lib and Soundblaster effects being sampled.

"Lure was developed with the VT system in mind, but what happened was when we first started, we didn't know what we were creating. We designed the original game while developing the system and then came back and totally redesigned the game. Obviously there's a learning curve associated with that and at one point, about six months ago, we said 'Right, this is our first system, it's not feasible to enhance it any further. We'll finish the first game off.' We're now in the process of writing the second system which will be an enhancement of the first." Charles is relying heavily on the criticisms that Lure receives (both from reviews and player feedback) to ensure that the second release will be closer to what everyone wants.

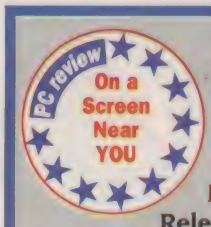
One of the biggest influences on Lure is the creative input of Dave Gibbons, comics writer and artist, and co-creator of the bestselling Watchmen graphic novel. Dave's role is to provide a suitable story for the game, to make the characters behave realistically and to generally ensure that the whole thing plays in a believable nature. Charles explains, "If you look at a Sierra game or one of the Ultimas, you couldn't write a book based on what happens there. In our games we want the plot to develop through character interaction, almost the way it would in a book, so that if you then sat down at the end, you could say 'Well that's a damn good plot'".



Charles also has aims to apply the Virtual Theatre system to virtual reality technology. "Anybody and their dog can do good 3D that's been proved. Somebody as bright as Archer Maclean can sit down and in a relatively short period, knowing very little about 3D, he's developed one of the best 3D games yet produced [Jimmy White's Whirlwind Snooker]. We feel that we can pick up 3D technology in no time at all, we could even buy that in. What is much more important is that feeling of being in a real world. There are two sides to VR, the 3D polygons and the technology to create real worlds. We're going down one route and everybody else is going down the other. When the virtual reality thing explodes, one of us is going to be proved right."

Closer to home though is the second Virtual Theatre release. Details on its nature are still very thin on the ground, suffice to say the plot is centred around the Cyberpunk genre and there's going to be even more character interaction, an improved interface (not that it needs it) and plenty of animated sequences. For now though, Virgin are expecting to get Lure Of The Temptress out in time for a June release.

These are the Castle Wall and the Severed Arms Pub in both 256-colour VGA and 16-colour EGA. As you can see, for EGA it's very detailed.



Title: Global Effect
Developement Team: Millenium
Softography: The Adventures of Robin Hood
Publisher: Millenium/Electronic Arts
Release Date: End of May
Price: £34.99

An accurate world simulator that uses a specially written multi-tasking system.

Global Effect

Sim City was the program that started it all, then came Populous and now, two years on, God sims (as they're known) are springing up left, right and centre. Global Effect is the latest of these and, like its predecessors, places you in charge of an entire planet which you must successfully manage.

Unlike Maxis' Sim Earth, or MicroProse's Civilization, which both have the player starting in the God biz during the early stages of the planet's development, Global Effect deals largely with the recovery of worlds in environmental trouble. The emphasis is on achieving an ecological balance.

Your ecological and environmental aim is reached while introducing man into the global picture in a controlled way. Dependencies between elements of the civilisation have been modelled on real world interaction. So, before you can establish a large city, you need to set up a power source for it, and as it grows larger, other services like sewage treatment and fresh water supplies must be installed.

As your cities are growing you must also take care of the environment. This means finding ways of controlling pollution, re-introducing green belts and forests, and protecting the ozone layer to prevent global warming. The game soon becomes a difficult balancing act between man and nature.

To make life even more difficult, every action you take costs energy, of which you only have a limited amount. This even applies to mundane actions such as moving around the map, forcing you to think carefully about every move you make.

Toby Simpson, who led the development at Millennium, has been working on Global Effect for two years now, although the game has been running in one form or another for about a year. Millennium's aim has quite simply been to produce the ultimate world simulator.

The world map shows likely places for settlements and trouble spots.

Major ecological events are shown immediately whenever they occur.

Seizmic surveys are just one of the services available to you.

Looking at the specification of Global Effect you can see what it means. Over 75,000 lines of code simulate a complete environmental system using a specially written, multi-tasking operating system. Over 64,000 locations are continuously monitored, and the program manages details such as coastal erosion, expansion of deserts and seismic activity.

These complexities are carefully hidden from the player though, and he is not expecting to deal with the individual economics of running each city. The sole aim is to construct a large civilisation, while dealing with any environmental side effects. Toby relates an experience that the development team had while play-testing the game. "We were playing it in the office and began using nuclear weapons, eventually causing complete mutual destruction. It demonstrated how very easy it is to start wars and how difficult is is to stop them. It's quite scary in some ways."

The environmental data has been as accurately modelled as possible, but since nobody knows in detail exactly how all the ecological and environmental elements of the world interact, to a certain extent it is open to interpretation. At no stage, however, has playability been sacrificed for accuracy. "As soon as it stops becoming a game," Toby explains, "it becomes rather pointless."

There are several set scenarios the player can tackle, which set up challenges from reviving a spent world to recovering from environmental disaster caused by over-industrialisation. These can be played against a human opponent via a serial link or against a computer controlled opponent. The way that the computer plays depends upon the scenario chosen. In the military force scenario for instance, the computer's aim is to use aggression to wipe the player out as quickly as possible. In a standard Green Field scenario, on the other hand, the computer player will be far more moderate, and aim to keep a good environmental balance, not attacking the human player unless provoked. It is also possible to completely customise the way the game plays.

The God/World simulation market is reasonably well served at the moment, with games ranging from the pure technical simulation, Sim Earth, to the out and out game, Populous. Global effect looks like it might successfully fill the niche that lies between them.

Once you have established a powers ource and a small city you will have to quickly provide other services, like sewage treatment and local farms.

S THE COLD WAR REALLY OVER?

OR JUST ABOUT TO HEAT UP?

HARPOON

Bush and Yeltsin may be talking peace and love, but the NATO Naval Task Force and the Soviet Fleet are still out there with some hi-tech weaponry on board.

In the "Harpoon™" series, you won't have to imagine what might happen if they were ever unleashed against each other. You'll be right in there directing the battles.

Choose which side you wish to command and decide whether or not you need a nuclear capability, the level of air support and the weather conditions you'll fight under.

The scale of the complete "Harpoon" Library is quite awesome, featuring no less than 60 battle scenarios fought in all the most dangerous seas in the world. The initial Harpoon includes Battlesets No.1 and No.2. To this you can add Battleset No.3 – the Mediterranean conflict and Battleset No.4 – the Indian Ocean and the Persian Gulf.

Plus, with "Harpoon™ Scenario Editior™" you can also create your own battle situations and rules of engagement.

"Harpoon" operates in real-time combat under your complete control although each scenario reflects how the rest of the world might respond to your actions.

You may have seen or heard of Harpoon before. You'll find this new version, distributed by Electronic Arts, easily the best and by far the most up to date.

Should you have bought the original "Harpoon", but you don't have a version 1.1 or higher, you can get an Upgrade of the Harpoon program, by sending just £7.50 (Eurocheque in UK £s) along with your old program disks to:
Electronic Arts, 11-49 Station Road, Langley, Berks (England) SL3 8YN.

Available on IBM/PC and Amiga.

THREE-SIXTY

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Tel: 0753 549442, Fax: 0753 546672

PC review On a Screen Near YOU

Title: **Shadowlands**
Developer: **Peakstar Software (from an original design by Teque London Ltd.)**
Softography: **(Peakstar) Blasteroids, Moonshine Racers**
Genre: **RPG** Publisher: **Domark**
Release Date: **April/May** Price: **£TBA**

Fully interactive multi-character role-playing game

Shadowlands

Next to flight simulators, role-playing games make up the largest gaming genre in the PC market today. The very fact that an RPG can describe anything from SSI's AD&D series to The Secret Of Monkey Island means that there is hardly a major software house in existence that isn't producing one in some shape or another. Unfortunately this shape tends to be either a first person perspective of a 3D dungeon or a semi-overhead view of a party of poorly defined sprites and basic colour schemes. The one overriding factor in all of these RPGs is the 'single figure representing a party of characters' system. Be it the single viewpoint of Eye Of The Beholder or the solo horse icon riding across the wastelands of Gateway To The Savage Frontier, there haven't been many games that really do justice to the term 'character interaction'.

Shadowlands aims to change all that. The very heart of the game lies in its use of individual controls for each of the four party members caught up in this tale of resurrection and mind control. You play the part of a young prince, savagely murdered by an invading army. The only thing is, you're not quite dead. A magical stream into which your body fell somehow manages to keep your spirit alive and thanks to this fortunate quirk of fate you take control a group of four adventures, chosen from hundreds, and guide them through the desolate Shadowlands of the title to find the remains of your dead body and a temple of rebirth.

"It's a game style that we've enjoyed and played quite a few different examples of," reveals Dean Lester, Managing Director of Teque London and chief designer and developer of the game, "it's something with more depth to it, and considering our history is one of doing coin-op conversions, it was nice to break the mould and go from one extreme to the other, to show that we can be flexible. It was also the kind of game that we wanted to play ourselves."

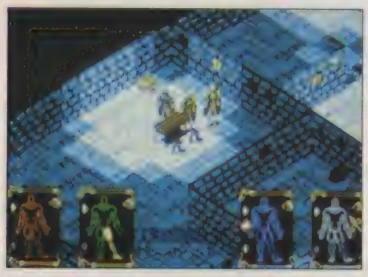
The original Amiga and ST versions of Shadowlands were worked on by Dean, Barry Costas (programming) and Mark Anthony (graphics), but the PC version has been handed over to Bill Caunt of Peakstar Software. "We had spent a year and a half doing the 68000 versions and it would have involved re-inventing the wheel again to do it on the PC," explains Dean, "so we decided at length that it would be a job for someone else to do while we worked on newer and original ideas. Bill's very experienced and knows the game well. He's had his head down and been working hard to get the conversion as accurate as possible."

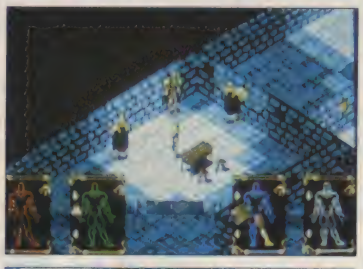
Shadowlands has several original ideas, not least of which is Photoscaping, the term given to the realistic use of light throughout the game (see panel for more information). Apart from adding to the atmosphere, Photoscaping has allowed Teque to develop some fiendish light-based traps and puzzles for the unwitting player to stumble across. "We wanted to do an RPG that was similar, yet different," says Dean. "We didn't want to be accused of taking other people's ideas and just re-hashing them, so we took a new perspective which is the isometric scrolling rather than the first-person view which is much more common, and we wanted to add some new elements to it that would change the look of the game, add some atmosphere and change the way that the game played.

"That's where we started thinking about lighting. In films, lighting is used to create atmosphere and there's no reason why in the games industry lighting can't be used to the same effect. We looked at different ideas and did a few calculations and realised that it would be possible to do real-time ray-tracing on home computers. The machines could just about cope with a reasonable speed as long as the resolution of the ray-tracing was kept quite low. That's what Photoscaping is all about really, that in real-time the system looks at a light source and calculates all the rays that are coming from that and can then create light and shadow and work out where the light and darkness should fall. It adds gameplay elements that people haven't seen before and it adds a sense of atmosphere to the game that is usually lacking. It gives the game an original element to it that people haven't seen and we're interested in experimenting with it. I think it all works together quite successfully."

Shadowlands's other main area of originality comes from its individual character control. Separate commands can be issued to each of the four heroes, allowing them to perform different actions at the same time, be pulled out of tricky

The individual and multi-character controls in action. The top picture shows the party exploring as a group, then with the flick of a switch (middle pic) one of the group is teleported to a separate room entirely (bottom pic).





The control method has been designed to be as intuitive as possible. Along the bottom of the screen are a set of individual control icons for each character. Click on a head and that character will Read something, click on an arm and he'll Use something. If a portrait or a back is shown instead of the controls, it means the character is too far away to control.

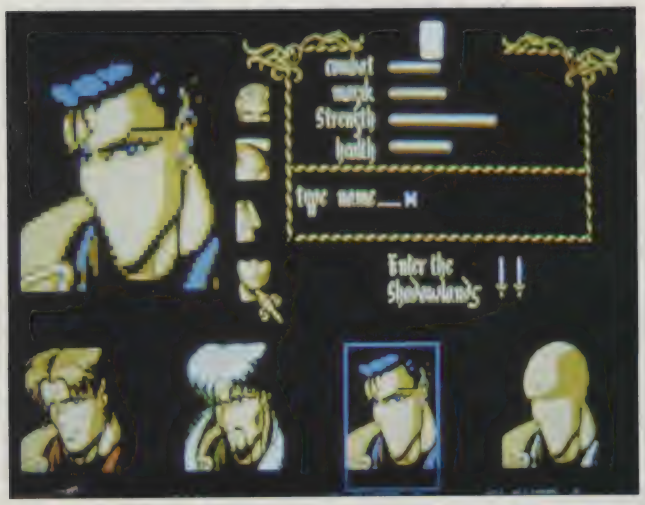
combat situations when they lose too much energy while still having the others fight on, and perform that one function that practically no other RPG has been able to do effectively, split up the group.

"That's a complaint from games like Dungeon Master where the gameplay was excellent except for the fact that you didn't really have four characters, just one character with four different personalities. You never felt any freedom in the game to explore independently. By using the isometric perspective we actually managed to split the party, devise a control system that was intuitive and create puzzles that would require characters to be in different parts of the game world simultaneously."

Along with Lure Of The Temptress (see page 16), Shadowlands looks ready to introduce new standards of quality and gameplay for the RPG genre.

The finished game will contain 14 levels of traps, puzzles and monsters, set over several different landscapes. Forests, dungeons, garden mazes, ancient Egyptian temples, all the stereotypical fantasy themes are included along with all the usual fantasy monsters. Minotaurs, skeletons, rats and scorpions are just some of the things to look forward to (or not depending on your point of view).

"Role-playing games fit into the game style where people tend to collect several versions, you don't just buy one role-playing game. If you enjoy this type of game then you tend to buy several and enjoy all of them for different reasons. We think Shadowlands presents a lot more action most other games. It's horses for courses really and Shadowlands is intended to appeal to both the novice and people who are quite experienced with RPGs."



The character generation screen allows you to determine everything from how strong someone is to what they look like thanks to the 'photo-fit' face creator.

One unique feature of Shadowlands is the ability to pre-determine a number of formations to walk in. The chess board allows you to put your characters wherever you want them.

"Looks set to become Britain's answer to Sierra and Lucasfilm"

{Paul Presley • PC Review}

...All wickedness is but little to the wickedness of a woman...

The Bible • Apocrypha Ib.25:19

The most gruesome solution to Executive Stress yet!

Coming soon from Mindscape.

MINDSCAPE

SPECIAL

Films and books have always been popular with software houses looking for a good licence tie-in. Now things have come full circle – you can read the book of the game! Paul Rigby browses through the latest titles.

Brought to book

In concert with the increase of the popularity of the PC as a games playing machine is the dramatic output, from a small number of publishers, of games-related books.

It's not really that surprising, however. Whenever any computer or other popular medium (from Madonna to Ford Sierras) achieves commercial success and public interest you will find alternative sources providing a sort of 'service support', giving you, the customer, extra information and so on and yet another pipe to flush your hard earned cash down. All of which begs the question: are these computer game books necessary and at all useful?

To answer that question you only have to take a quick look at the publishers themselves and their increasing book-lists plus the number of books entering the 'second edition' phase, due to their continuing popularity. From past sales, at least, it appears quite a few people find these books of interest and of use.

On the PC, the majority of the game book-related titles cover the more cerebral titles – the war and strategy games, the flight simulations, the adventures, the role-playing games. Arcade games are noticeably absent from the PC book lists, which is odd because Nintendo and Sega arcade book-titles, containing help, cheats and so on, proliferate from those same PC book publishers. We obviously have a case of the PC identity pigeon-hole here. That is, the PC is looked upon as the machine for the 'thinking mature person' while the Nintendos and Segas of this world fall into the 'kiddies' section – at least in the minds of the book

Not only a 'how-to' book, Mike Harrison's Strategy Guide also features an interview with WC designer Chris Roberts and background detail on the game.

SIM EARTH

We looked at three books for this global strategy game: SimEarth – the Official Strategy Guide by Rusel DeMaria; The SimEarth Bible by Johnny L Wilson and Master Sim City/Sim Earth by Dan and Dennis Derrick.

Both DeMaria and Wilson have the added 'kudos' of a preface and foreword written by James Lovelock, the chap who put forward the Gaia hypothesis the game is based upon.

DeMaria's book (314 pages) begins with a 76-page tutorial. Full of factual information it breaks the text into a number of boxes which attract the eye. The main body of the text, the reference, continues this format along with some excellent illustrations. Individual simulations and useful appendices (eg, that explain the game's 'messages') finish off a quality book.

Wilson's book (185 pages) restricts itself to a few game illustrations and a more standard design. The text is helpful, rather philosophical at times, but lacks the wealth of factual data represented by DeMaria's title.

The Derricks' tome also covers Sim City. However, only about 200 of the 500 or so pages cover Sim Earth. The book is geared to explaining the game menu by menu, taking you, key by key, through set game moves. No background information or extra illustrations are offered.

RAILROAD TYCOON

Two titles are available for this classic MicroProse strategy game. The Official Guide to Railroad Tycoon, written by Russell Sipe, publisher of US magazine, Computer Gaming World, spans around 180-pages in small, near A5 format. Shay Addams, editor of the adventure magazine Questbusters, is responsible for Railroad Tycoon – Master Strategies for Empire Builders, which is presented in a larger, near A4 format, spanning 229 pages.

A quick flick through both books tells you Sipe's book dwells more upon the historical background and holds the game in more of a historical perspective than Addams' effort. However, Addams does offer a more structured read with a handy series of checklists at the end of each chapter and 'hot-tip' clip art at significant points in the margin. Both men provide tables and lists. Sipe, however, does offer more information on the general workings of the game down to a few essential mathematical equations! Addams does appear to dwell more upon particular strategies, though, giving each more time and space. Both books are invaluable to the Railroad Tycooner.

Purchase depends upon what you are looking for. Addams offers wider scope for strategic discussion, while Sipe gives historical perspective alongside interviews with the designers and unique insight into the game itself.

LEISURE SUIT LARRY

Three books cover the Leisure Suit Larry series of games. Published by Bantam, Compute and Abacus the books are The Authorized, Uncensored, Leisure Suit Larry Bedside Companion by Peter Spear; The Official Book of Leisure Suit Larry by Ralph Roberts and Al Lowe; and The Leisure Suit Larry Story by Michael Mueller and Martin Schuchardt, respectively.

The Ralph Roberts book has the worthy help of the Larry inventor, Al Lowe, to guide him through the mire. It is a more general book than other books giving you the story behind and the making of Larry, a resumé of Sierra, the publisher of the game, and an absolutely hilarious interview between Al Lowe

OTHERS

There are many other books that are worth buying but have escaped these pages due to space restrictions. SAMS' Master Ultima (Ralph Roberts) includes 384 pages that takes you through Ultimas I to VI. It covers strategies, brief reviews of all six games and a full briefing on each, plus hints and tips.

Electronic Battlefield (Bob Guerra) gives advice and tips on 30 war games. Strangely enough, all are relative oldies in the field from Warship and USAAF to Gunship and Mech Brigade. Including strategies, accounts of scenarios, command reference charts, hints, etc, this book is a real blast from the past and a good excuse to dust down those oldies for another play.

Wing Commander I and II: The Ultimate Strategy Guide (Mike Harrison) is an excellent portrayal of everything you are likely to need for these well-received games. Each mission and campaign examined is each ship is explored, charts, tables, screenshots, tips on combat manoeuvres, plus in-depth interviews make this book indispensable for the WC enthusiast.

Master Populous (Clayton Walnum) via SAMS examines Populous 1, the expansion disk and a 'sneak' preview of Populous 2. Within the 202 pages are sections on an explanation of the mechanics of the game, how to get the best from your walkers, a section on the papal magnet, modem play and much more.

The King's Quest Companion, by Peter Spear, is now in its second edition, and deals with all King's Quests from I to V, concentrating on answers and solutions to get you moving through the games. This new issue includes extra illustrations and maps from Spear's original.

Finally, Prima's Harpoon Battlebook (James DeGoey) includes text from designer Larry Bond and author Tom Clancy. In addition to insights into the original games plus a few 'secrets' previously unknown, this book also covers Battlesets 1-3.

FLIGHT SIMULATOR

As far as associated books are concerned Sublogic/ Microsoft's Flight Simulator is the granddaddy of them all. Since 1982, when the first Flight Simulator, designed to run under DOS 2.0, came out, the program has become a flight sim standard for PC owners.

There are more books written about this one game program than any other. I counted 10 – but there are probably a few more I've missed.

The great thing about Flight Simulator books is they do not tend to overlap, but complement each other. Charles Gulick's series of books: 40 Great Flight Simulator Adventures; 40 More...; Flight Simulator Odyssey and Flight Simulator Co-Pilot are essential reading, giving you a tour of the Flight Simulator world while also teaching you to fly.

Other 'How to ... ' books include: Learning to Fly with Flight Simulator (John Rafferty) and Take Off (Werner Leinhos). Take Off has the advantage of being recent enough to cover the latest version, version 4.0.

John Rafferty's Realistic Commercial Flying with Flight Simulator is a unique book which gives you 30 realistic commercial air assignments.

The latest book is written by Pete Bonanni. Called Flight Simulator Companion, it covers version 4.0 and the recent Aircraft and Scenery Designer. As well as covering both of these programs the book also includes a floppy disk full of custom-made scenery, new aircraft and airports for you to discover.

publishers. Or perhaps SimEarth is just so much more convoluted that there's that much more to say about it.

The lack of PC arcade help titles represents a gaping hole in the publisher's book-lists and so anyone who requires help on the Double Dragons and Xenon 2s of this PC world may have to look elsewhere – PC Review, for example. It may be the case that arcade titles will always get short shrift from the book publishers until a true PC games machine appears on the scene in significant numbers and appeals to the younger games-player.

However, the cerebral game does allow more scope for a book title. It can offer the chance to provide one whole book for one whole game – as opposed to dozens of arcade titles that would, surely, fill a single arcade book title.

Generally, books on strategy and simulation games allow the author to provide alternative strategies (no matter how complex) maps, hints, tactics, graphs, interviews with designers and, if the game's licence allows, the real-life personality the game is based upon. Game 'secrets' are another popular selling point – those areas of the game previously only known to the designers and programmers. This lets the author wallow in their subject to excessive amounts with the active encouragement of the supporting publisher. What the prospective buyer shouldn't look for is a cosy fireside read or sparkling literary wit. On the whole, these books can be heavy-going.

The big problem for the PC gamer who is looking for a book to support him while he is playing one particular game is the duplication of titles from rival publishers. Take the eternally popular character from the Sierra stable – Leisure Suit Larry. Bantam Books, Compute and Abacus all have books covering the Larry game titles. Bantam declares its title is 'authorised' while Compute announces its title is 'official'. Abacus uses no such tag to push its book.

However, who is to say the latter title contains information which is unavailable in the other two? This is one of the more important subjects of this article. For those who are confused here is a basic guide to the more popular titles.

> *"The lack of PC arcade help-titles represents a gaping hole in the publishers' book-lists."*

Books tagged with the 'official' stamp normally include the full co-operation of the software house concerned. They also tend to include the active participation of the designers and all of the advice, maps, charts, etc, that they can offer. 'Authorised' books normally offer a book that has been given the nod by the software house but may not include further participation by the designers and so on. Other books have usually been compiled without any formal co-operation with the software house.

Those books not tagged 'official' should not be discounted or looked upon unfavourably, however. Each author brings their own talents to the fore when writing any book. You may find that one particular author presents their information in a clearer, more understandable, manner than other authors writing on the same subject for 'official' titles. The author of an unofficial publication may be that one gaming 'buff' who has found a range of unique strategies, or provides the most complete background to the game. Remember, therefore, while the official game-book author is liable to have a large amount of information at their finger-tips, it is, ultimately, the author's skill which will determine the relevance and value of any PC game book.

and Larry himself. Different computer versions are discussed then general hints are given for all of the three games. Finally, the answers to the quiz at the beginning of the games are given.

The Abacus book also gives these quiz answers but in a more presentable form book. Although a little smaller, it is a 'quality' production (better paper, clearer design) but concentrates more upon the hints and tips and so misses the interesting sidelines offered by the Compute book.

Spear's book is the only title, at the moment, to include both the Larry 5 and the updated VGA version of Larry 1. It includes a couple of initial trivia chapters and then looks at each game in depth, plus hints and maps.

If you just want a good hint book then the Abacus volume has the edge. For a more appreciative Larry experience, full of humour and insight catch the Compute book. Spear's book is handy for those who are in dire need of information for Larry 5 and the updated Larry 1.

All of the books mentioned in this article can be purchased in the UK from all good bookshops, computer stores or from Computer Manuals (021) 706 6000.

SPECIAL

Ad Lib has taken its PC standard Music Synthesizer Card and updated and upgraded it. Paul Rigby reports on the Ad Lib Gold Card's new features and potential

AD LIB'S GOL

Way back in the 80s when the PC was looked upon as nothing but a business machine with all of the glamour of a small gerbil, a Canadian company, Ad Lib Inc, produced a plug-in PC card which could produce rather pleasant sounds via a FM-synthesis, on-board chip, produced, many suspected, by Yamaha (although Ad Lib always scratched the name off the chip for some reason).

Ad Lib had the audacity to approach the large American games software houses, and ask them to support this relatively cheap sound card by inserting Ad Lib drivers into their games, the US being the stronhold of PC games players at that time. As the PC speaker was the only other common sound source around (not the stiffest competition, I'm sure you'd agree), the software houses snapped up the Ad Lib card with much merriment and the company suddenly found itself with a hardware hit on its hands.

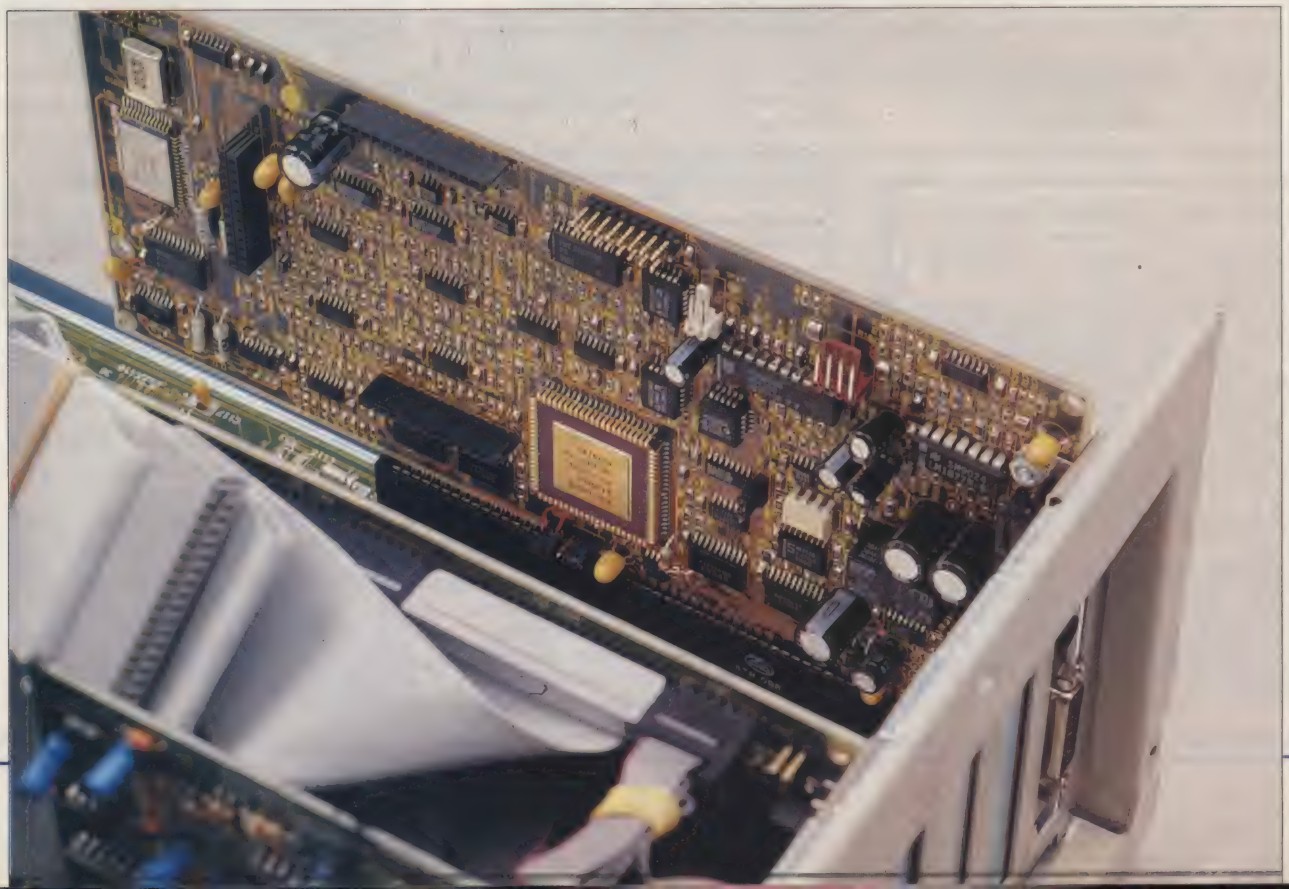
Then the competition appeared. On the grounds of sound quality, Roland sped past Ad Lib like a Ferrari passes a Morris Minor. OK, it was (is) expensive but the *sound*! Creative Labs' Sound Blaster proved to be more of a direct competitor. Not only did it offer Ad Lib compatibility at a comparable price but, in addition, a DAC chip that enabled sampled music/voices/noises to be played, too. The basic Ad Lib sound card found itself under growing pressure from the Sound Blaster, doubly so with the announcement of Creative Labs' Sound Blaster Pro (which includes extra features). This was the time for the empire to strike back, and Ad Lib certainly has – with the Ad Lib Gold card.

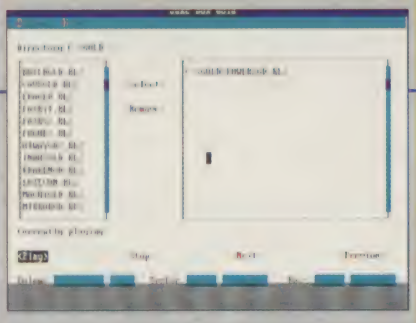
Basically, the new Ad Lib Gold is a stereo sound card with the multi-functional capability of digital recording, playback of digitised and synthesised sounds, analogue audio, mixing, MIDI recording and playback. It also contains a joystick port and a SCSI/CD-ROM interface (a standard interface, unlike the Sound Blaster Pro which is non-standard) as an option (on the Gold 1000 card) or standard (on the Gold 2000). Which all sounds very impressive but that's not all. You can also plug in a microphone for use with a supplied Windows program called Voice Pad (or other third party software), a tape deck or a CD drive using the latter software, a telephone for use with the add-on system that drives a computer-driven answering machine and, finally, a 'surround sound', special effects module. For more information about the 'add-ons' see the panel opposite.

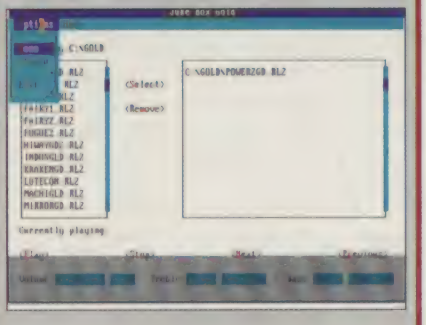
> *"On the grounds of sound quality, Roland sped past Ad Lib like a Ferrari passes a Morris Minor"*

Obviously, Ad Lib has been hard at work with the above updates and improvements. I managed to drag Jean-Yves Deschenes, Ad Lib's software development manager, from his busy schedule to ask him about the reported improvements in the basic feature that underpins the whole Ad Lib Gold card, the FM Synthesised sound.

"The basic evolution to the Gold card,"







said Jean-Yves, "was that, a couple of years ago, we were discussing with Yamaha the possibility of enhancing the Gold card to use some of the recent [sound] chips that they had used for some of their commercial synthesisers.

"However, technically, we decided that they were not what we needed. We also looked at compatibility with the original card in that decision. Finally, we asked Yamaha to design us a new FM chip which would incorporate the FM features of their mid-range synthesisers with a greater number of voices [the OPL III] plus a chip that would allow sampling."

The chip, however, that handles the sampling also performs many of the tasks listed above in the specification list which all helps to keep the cost of the final card down.

"While we were talking to Yamaha," continued Jean-Yves, "Microsoft was issuing new multimedia standards and the MPC [Multimedia PC] committee was just being formed. As the design of the chips were not complete, at the time, we decided to follow these MPC specifications so that we could maintain the features for MPC compatibility."

But why has it taken so long? Well, Ad Lib says that it could have produced a card to rival the Sound Blaster. However, it considered that it would be more competitive to leapfrog Sound Blaster and even square off against the latest Sound Blaster Pro.

Fine. But why stop there? Whatever the advantages of the Gold card, it is does not reach the heady heights of Roland LAPC-I sound. Jean-Yves responded to that by admitting that the Gold is not of that same quality. "The fact is that we don't want to make the product too expensive or too complex. There was the possibility of including more advanced hardware with a variable sampling rate to 16-bit and so on. However, this would have pushed up the costs far too high for the customer we are catering for. If the technology comes down in price we might include such technology. Of course, there is also the other possibility that we may produce a higher end card," he indicated.

Turning to the Gold's main competitors, Creative Labs' Sound Blaster and Sound Blaster Pro, Jean-Yves Deschanes voiced his confidence that both cards fall behind the Gold on features, although both the Gold and Pro cards retail for comparable prices.

Jean-Yves took the digitised sound features of both cards, a highly saleable feature, as an initial broadside. "The Sound Blaster plays back samples [digitised voices, special effects, etc] using DMA. The problem is that their implementation of it limits the size of the sample that can be played continuously to just 64K. Once the

D STANDARD

Top: the jukebox is a non-interactive module, offering a selection of tunes which you can play back, in stero or mono, to hear the musical capabilities of the card.
Above: balance and mixer values can be set to your own preference.

Surround sound

This module, which simply plugs into the Gold card itself, gives a form of echo 'reverb' to sounds produced by the Gold card. Don't be confused by the name. It is not a quadraphonic system, and only requires two speakers. This system will be handy for games with characters situated in large caves, caverns and buildings or where reverb can offer a brighter, grander sound. I'll bet Sierra could go a ball on this module.

The Surround Sound is not included on the basic card because the Gold card is aimed at business MPC users in addition to games players. Ad Lib were afraid that sales would suffer if certain categories of customer recognised 'unwanted' or 'wasted' hardware on the card. This is why there are so many add-on modules. You 'pick-n-mix' the utilities you require which all helps to keep the cost of the basic Gold card down.

Hangin' on the telephone card

The telephone option connector connects to a telephone line interface add-on board. This board allows the Gold card to be connected to a standard telephone line. Functions include the creation of a complete digital telephone answering system capable of leaving personalised messages for callers, recording and playing back messages left by callers or creating interactive automated telephone routing and database information. Yes you can set up your very own 0898 number here! Roll up, roll up ...

Voicepad for Windows

In simple terms, Voice-Pad is a glorified alarm clock and Mac-like in its conception. It allows you to record, via Windows, voice notes that can be played back for later reference and can be played at a specified time and date.

SPECIAL

AD LIB'S GOLD STANDARD

sample is over you have a very, very short time between the moment that you notice that the sample is over and the moment that you try the next sample if you don't want to hear clicks. On the Sound Blaster, there is no hardware operation to reduce the time between the operations."

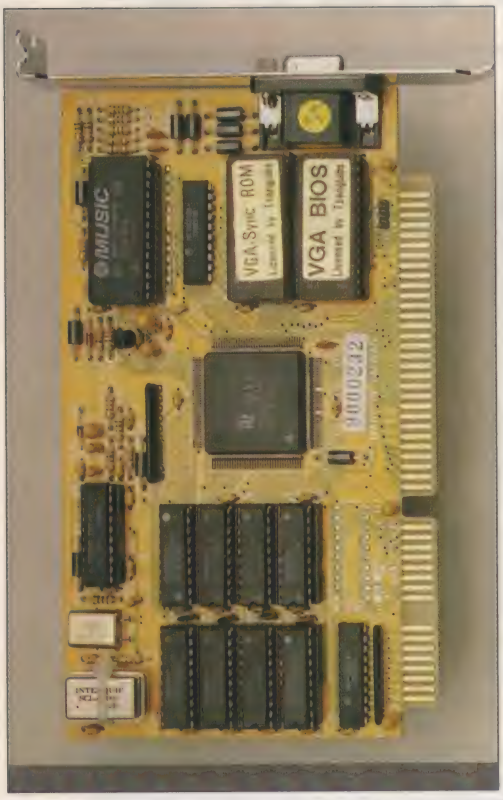
Basically, what Jean-Yves is saying is that the Sound Blaster is more prone to those irritating clicks in between the playing of samples which often ruins the atmosphere of the game. Imagine two characters talking, in a game, and having to hear an audible click in between each speech. Fine when the characters are using walkie-talkies but not during normal everyday conversation!

The reason is down to hardware limitations on the Sound Blaster. There are software work-rounds, but this then means that the CPU comes into the equation.

Furthermore, time spent by your PC's CPU doing the sound card's job is time spent away from playing your game, thus slowing the game down a bit. Anyone who has played Origin's Wing Commander 2 will testify to that.

However, the Sound Blaster's UK distibutor, Westpoint Creative, thinks Ad Lib is making a fuss about nothing. "This business about samples bigger than 64K is nonsense," says MD Mike Weatherley. "You can sample up to 10Mb and more without any problems."

"The Ad Lib Gold provides you with a buffer of 128 bytes. This means that when the DMA transfer [the sample] is over you still have 128 bytes ahead to set up a new DMA transfer." adds Jean-Yves.



> *"This software, even in this pre-release stage, is the most comprehensive configuration software I've ever seen"*

Again, in basic language, the Ad Lib Gold removes the possibility of clicks in-between samples because of the buffer which sort of acts as a bridge between one sample and another. Thus, no need for software patches and no need for your PC's CPU to have to share itself between your game and the sound card. This also means that you can also have one long Ad Lib Gold sample of, for example, 200K and you wouldn't, as Eric Morecombe was fond of exclaiming, be able to see the join – or hear it for that matter. Which all bodes well for the future of Multimedia as this sort of idea would be essential for Full Motion Video (video-like animation and sound on your PC).

Also, Ad Lib crows about the quality of its samples. They are 12-bit samples which is a vast improvement over the Sound Blaster's 8-bit efforts.

The difference is noticeable and when you consider that CD quality sound is 16-bit you can appreciate the potential of the Ad Lib samples.

In fact Ad Lib is very confident that its own chip-set, including the OPL III and the sampling chip, will become some sort of standard for MPCs. Intel, a major chip manufacturer, have already termed the chip-set as a 'reference' – which is a good start, by any means.

Other reported improvements over the Sound Blaster Pro includes the basic FM music. Jean-Yves Deschanes terms Creative Labs' new stereo FM music as "more sound" (same sound quality – more voices) rather than an improvement to the basic sound which comes from the special 20-voice, Yamaha chip used on the Gold.

On test

I managed to take a look at a pre-release version of the Ad Lib Gold itself. This came with a bunch of software, again pre-release (version 0.1, actually) that offers an extensive configuration set-up and a 'Jukebox' song presenter. The configuration software (which could also, largely, be altered via an additional simple pop-up utility) allowed me to mix a variety of inputs and outputs to create the correct balance (whether it be for games, the telephone answering machine, microphone, etc). Other options include the manipulation of the Surround Sound (not included in my kit), plus a number of tests. One of those included the digitised sounds. I could play back a sample, a voice in this case. I could also record a quick five-second sample, just to test that everything was okay. This software, even in this evaluation stage, is the most comprehensive configuration software I've ever seen accompanying a sound card. You can even alter the 'tone' of the output: the bass and treble, from the software configuration and pop-up utilities.

The pre-release example of the 'Jukebox' offered around a dozen or so songs of varying complexity. Some included sampled instruments and voices. Checking the basic FM sounds first, I did notice that the FM voices appeared to have a greater variety than the basic Ad Lib sound. The diversity, plus the greater number of voices, helped to give the card a 'bigger' sound.

However, it was when the samples were included that the whole card came to life. "Very impressive" was my initial reaction. Voices were clear with no hiss, sampled instruments blended nicely with the FM voices and the sampled bass effects gave the songs more punch and effect. Granted, the Gold still does not have the power or dynamic range of the Roland. However, all in all it remains striking.

Offering a rating at this stage in production is not the purpose of this article. But, if all goes well I can see the Ad Lib Gold becoming the ultimate 'all-round' sound card.

Using this control panel menu from DOS enables you to alter the settings for the Surround Module

The Ad Lib Gold Card's settings can be changed to suit your system with a number of hot keys.

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PROCESSOR UPGRADES

In this series of articles about the PC, hardware and software, we'll be taking you, step by step, through the ins and outs of using, controlling and upgrading your machine.
You'll find out what the PC's components are, how to use them, and how to use PC software to get the best out of your computer.

We get more queries about upgrading processors or adding accelerator boards to PCs than on any other topic. So, this month, Peter Gloster guides you through the minefield of options available for those who want to give their PC a bit more oomph.

You've all seen it: that gaudy neon sign displaying 'vacancy', those snappy little logos for the i486SX and Intel Inside — signs of a massive advertising campaign by Intel. So what does it mean? Simply that upgrading the power of your PC is big business. Upgradability is the word on every PC marketing manager's lips, and it's an option built into most of the latest machines.

However, in most cases there's a little more to pumping more power from your PC than simply plugging in another chip. If only upgrading was that simple — unfortunately PCs aren't like Wash'n'Go shampoo, and there's more than one way to skin a rabbit.

First, you've got to think carefully whether you even *want* to upgrade your PC. If it's to get more from your games, then you'd better check the box carefully for information on any possible gains from a more powerful system.

Which upgrade?

In general, a faster microprocessor chip (really the guts of your PC) will provide better all-round performance. The screen will update quicker (because a faster chip can process the image faster) and programs will read off your hard disk faster (because the processor can push data around faster). The result will be a smoother, less jerky appearance to games.

However, that'll probably be the end to what you notice immediately. A fast 386 processor and the memory tricks it can perform are more useful for people running multiple business applications or Microsoft Windows, but as these chips become more and more common, displacing older 286 models, the chances are that more and more games software will include 386-specific features.

There are three major things you can do to make your PC more efficient: upgrading the processor, improving the performance of the hard disk, and improving the graphics all aim to remove a performance bottleneck.

Upgrading the processor, for example, from a 286 to a 386SX, will provide an overall increase in speed and performance: it's very likely that you'll be substituting a chip that runs at 12MHz for one that runs at 20MHz, so that speed increase alone can be expected to give it more poke.

Adding a new — and faster — hard disk not only gives you more space to hold your games software but, as many programs read from disk while they're in use, it'll mean your PC gets data quicker to the processor.

One of the most noticeable things, especially when playing games, is how the screen updates. PCs weren't originally designed for graphics and little attention has been paid so far to improving the performance of a PC's video sub-system, although the resolution of graphics has increased (see First Steps, VGA and Super-VGA). Partly because of the popularity of Microsoft Windows, this is an area that many suppliers are addressing, and the result is that there are now quite a few video accelerator cards around (which don't just work with Windows).

Before we see how to upgrade the processing power of a PC, we need a brief look at the history of the processors inside.

Processor history

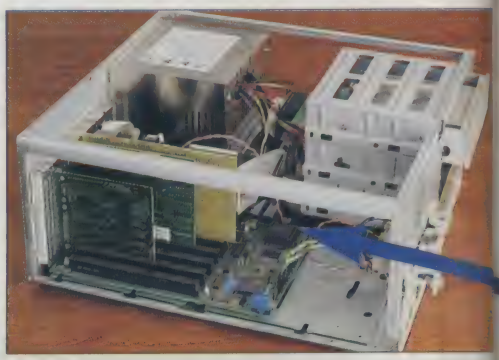
A long, long time ago, when IBM was designing its original PC, it needed a microprocessor chip to form the heart of its computing invention. So it looked around and decided on the 8086 from a chip-maker called Intel. This was a 16-bit chip with a heady speed of 4.77MHz.

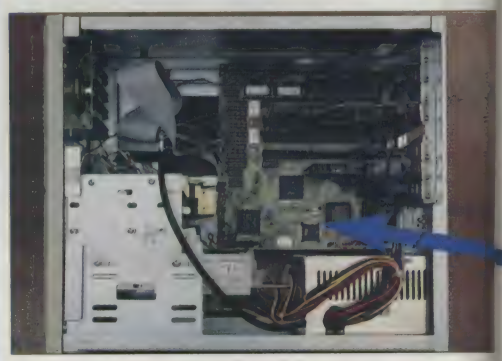
It didn't take too long before PC users were clamouring for more computing power. When IBM introduced the IBM PC/AT, it sported a new chip, the Intel 80286. Not only could this chip support more than the standard 640K of memory DOS uses for programs by some clever trick, but it was also faster than the 8086: it went along at a then heady 6MHz.

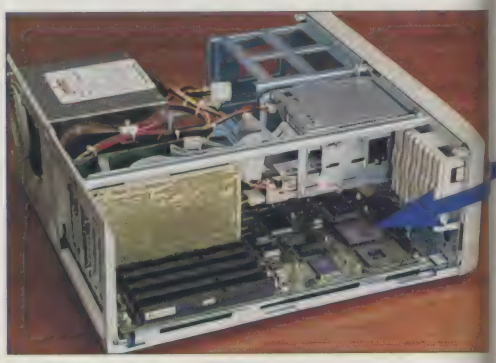
As time went on, the speed of the 286 was upped from 6MHz, to 8MHz, 10MHz and to 12MHz. With demand for PCs growing, Intel had also licensed its 80286 chip-making technology to two other companies, Harris and AMD.

It wasn't long before Intel's research and development team had come up with a new chip: the 386. The 80386 has two great advantages over the 286: it's a lot cleverer at handling any memory your PC has and a lot faster, too.

Let's deal with the speed first: the 8086 and 80286 were both 16-bit chips. This







means that they communicated with the system board, or motherboard, on a PC through 16 channels, one bit of data at a time. So you could move 16 bits of data in or out at a time. And inside the chip, it also moved data around in 16 bits.

The 80386 was a 32-bit chip: it could receive or push out 32 bits of data at a time and moved 32 bits of data around internally at a go. Not only did it immediately have twice the processing power of a 286, but it also started with a much higher clock speed of 16MHz, double that of Intel's 8MHz 80286.

Its extra memory handling also meant it could play clever tricks with any extra memory installed in a PC: if you had the right memory management software, you could run several applications simultaneously (this is called multitasking).

But if you've thought of upgrading your PC, you're probably yelling "what about the 386SX we've heard so much about?" The first 386 chip we've been talking about is, to give its full name, the i80386DX. The D denotes that its internal and external architecture were both 32-bit; the "i" denotes a licensed trademark of Intel (see Glossary). The i80386SX, while preserving the internal 32-bit architecture like the DX, only communicated with a PC's motherboard through 16 data channels.

So what's the point of producing something that seems like a step back? In the early days of the PC, there was a parallel occurrence: the 8088 chip. This was a cheaper version of the 16-bit 8086: it talked to the outside world of a PC in only 8 bits, which made it easier and cheaper for companies to design and produce PC motherboards. Likewise, using a 16-bit 386SX chip, meant that manufacturers could, for the most part, just adapt motherboard designs originally produced for the 16-bit 80286.

Intel's 386SX chip was quite a bit more expensive than its 386DX chip. But we mentioned earlier that Intel had licensed the rights to manufacture the 286 chip to other companies. Dropping the price of its 386SX chip would not only give the market faster and more powerful PCs but would, also, rather neatly leave its competitors AMD and Harris producing chips for a previous generation of computers.

That's exactly what happened. To be fair, with its extra power and ever more demanding software, the 386SX is now the minimum standard for any worthwhile PC. To come right back up to date, and that 'vacancy' sign I mentioned at the beginning, we're now seeing a re-run of the 386SX marketing battle with the 486SX that's currently attracting so much attention.

The 486 chip first appeared in i80486DX form: a 32-bit chip that incorporated the 386DX chip plus, to make it rather zippier, the 387DX maths co-processor and an 8Kb cache (which helps processing happen even faster). The 486SX is simply the 486DX without the co-processor and starts at lower clock speeds (16MHz and 20MHz). The 486DX started off at 25MHz and is now appearing in 33MHz and 50MHz versions.

Intel now has competition from AMD on the 386 chip front. Many new compatible PCs sport chips from AMD's Am386 chip family, where there are 386SX and DX equivalents. There are other versions of Intel's and AMD's 386 chips, but they're designed with minimising power consumption in notebook PCs and needn't concern us here.

Processor power

Assessing processor power is pretty easy: a 286 is better than an 8086, a 386 of either variety better than a 286. It's more debatable whether a 33MHz 386DX is better than a 20MHz 486SX.

Upgrading a processor isn't just a matter of replacing an old chip with a new one. For a start, they have different numbers of pins on the bottom, so they won't fit, not to mention the different designs of their internal and external electronics.

There are five types of processor upgrades:

- Adding a board with a faster chip that replaces the existing processor;
- Adding a smaller board that simply plugs into an old 286 processor socket;
- Adding a processor to an upgrade socket on the motherboard (as in the case of the 486SX);
- Replacing the motherboard entirely;
- Adding a maths co-processor.

Several upgrade solutions involve removing the current processor in your PC, adding a board with a faster processor on it, and plugging a lead from the board into the socket where your old processor used to be. This is a common solution where you've got a 286 machine and want to upgrade to a 386SX. However, there'll be a limited performance improvement: it's still a 16-bit solution, and the new chip is using the hard disk and graphics systems on the old PC. However, these should allow you

PUTTING A PRICE ON UPGRADING

The following is intended to give you some idea of what you could expect to spend on the various types of upgrade:

Processor board:

FastCache 25MHz 386SX (to upgrade 286): £350 without RAM
4Mb 70ns RAM installed on FastCache board: £160
Total: £510

Processor socket upgrade:

SX/NOW! 25MHz 386SX upgrade for PS/2 or non-standard AT motherboards: £320 (Uses existing RAM on motherboard)

Replacement motherboard:

20MHz 486SX motherboard (to replace 286): £370
4Mb 70ns RAM installed on motherboard: £160
Super I/O card (for parallel, serial ports): £20
NEC 108Mb IDE hard disk: £270
Total: £820

Further information on the above upgrades can be obtained from SMT on (0536) 402321.

Maths co-processors:

Intel 80287 XL (12MHz): £59
Intel 80387 (20MHz): £124

For further details on processors call Power Mark on (081) 951 3355.

Video cards:

Orchid Fahrenheit 1280: £320 – SMT on (0536) 402321
Prisma VGART 1024i: £129 – SMT on (0536) 402321
Taxan 587+: £229 – Taxan on (0344) 484646

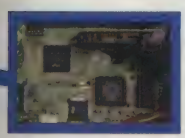
All prices exclude VAT.

SPOT THE PROCESSOR

The first thing is to identify the processor inside your PC. More than likely it's got an Intel chip inside. It's probably the largest, square chip on your PC's motherboard. Nearby you may see a vacant socket for a maths co-processor chip (which may have helpful markings on the board such as 80287 or 80387).

This 80286-based machine has a 286 processor manufactured by AMD, one of the companies licensed by Intel to provide PC chips. It's the largest square raised chip on the motherboard.

An Intel processor would normally have a small 'i' imprinted on the top of the chip and a longish printed number, the end of which will be 80286 or 80386.



This is a 386SX processor: 386SX chips are smaller than 386DX ones: they're usually soldered directly to the motherboard, which makes replacement difficult. Note also the vacant slot on the right for an accompanying maths co-processor to speed up some operations.

Again the largest of the cluster of chips on the motherboard, this 80386DX (DX denotes the full 32-bit processor as opposed to the 16/32-bit SX version) is also produced by AMD rather than the original manufacturer, Intel.

FIRST STEPS WITH THE PC

to put new RAM chips on the upgrade board so that you're not constrained by older, slower memory in the PC.

People with, in particular, IBM PS/2 machines that use a different bus architecture, or who haven't got a spare slot for another card can use a different type of upgrade. This is a small card that fits directly into the 286 socket; it doesn't allow you to use faster RAM, because there's no room on the board. One of the most popular is called the SX/NOW!.

Upgrading is easy if you've got a 486SX machine. These have a motherboard complete with processor upgrade slot, which means you just plug in a faster upgrade chip. This Intel chip, called the OverDrive Processor, doubles the clock speed of the existing processor and is claimed to improve your PC's performance by up to 70 or 80 per cent This, like the maths co-processor solution, is the easiest upgrade to perform and is no more than the cost of the chip.

A more radical solution is to replace the motherboard completely, but this type of transplant requires more commitment and determination. A typical example is to upgrade a 286 machine with a 486SX motherboard, which can then be upgraded with a faster OverDrive Processor chip. Although more hassle, this is likely to be a better long-term solution. With this transplant, you'd be best advised to renew your hard disk (which will approximately double the price of the upgrade). New memory will also be required, but this solution is more satisfactory: the only old components left will be the power supply, casing and floppy disk drives, so you've almost got a new machine.

One caveat: you should check carefully with a potential motherboard supplier whether its replacement boards will fit your PC: some designs can't be upgraded because of their dimensions (you may have to move one or two minor bits around anyway). This may restrict you to a SX/NOW!-type solution.

Just like 486SX motherboards, 8086, 286 and 386 motherboards have a vacant socket for what's called a maths, or numeric, co-processor. These chips, generically called 80x87s, help the main processor with special maths (floating-point operations). In particular, these are important in, for example, recalculating large spreadsheets or redrawing a CAD (computer-aided design) drawing. A maths co-processor can make a big difference to the speed at which an operation proceeds and the screen redraws, but there's one snag: software has to be specifically written to take advantage of such a chip.

If you've software that can use a co-processor, it's a simple upgrade: just plug the chip in (like all processor chips, take very great care of the little pins, which bend and get damaged easily, and make sure the chip is the right way round — don't force it!).

Maths co-processors are less satisfactory in 286 machines, because the speeds of the 286 and 287 chips aren't synchronised. With 386 chips, there are two types, 387SX and 387DX. These depend on whether you've got a 386SX or DX processor. 386 co-processors run at the same speed as the main processor, so make sure you check the speed before you buy. 486DX processors already have a maths co-processor built in. As I've mentioned, 486SX machines have an upgrade socket: not only can you insert an OverDrive Processor for improved

Glossary

80x86: this denotes the 286, 386 and 486 families of PC microprocessor chips.

Clock speed: this is the speed at which the processor works. Expressed in Megahertz (MHz), the faster its speed, the faster your PC. The original 8086 chugged along at 4.77MHz; the latest 486DX chips speed along at 50MHz.

i386: this is a registered Intel trademark, as is, for example, i486SX. A US court decided in 1991 that 386 and 486 by themselves weren't registered trademarks. That way, AMD has been able to call its family of 386-compatible processors the Am386

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Other solutions

I mentioned adding a bigger and faster hard disk, or a graphics accelerator card as other ways to upgrade.

Generally, hard disks have become faster and faster, and offer more and more capacity: buy as large a hard disk as you can afford. Large hard disks tend to be faster than smaller ones, too. Consider a 100Mb hard disk as the absolute minimum if you're upgrading, and tend towards 200Mb for safety (you can fill one of these pretty fast these days). See First Steps in PC Review Issue 3 for details on fitting a hard disk.

Microsoft Windows, which rather knackers system performance, has resulted in a raft of graphics accelerator products coming to market. Although designed primarily for Windows, many of these cards also work for DOS-only software, too. Performance increases because these cards use a special graphics chip to speed things up, and usually have a fair dollop of RAM on them. These cards, which cost £200 to £300, will give performance a boost, but you need to check whether there are drivers specifically for the software you intend to use, otherwise it's a waste of money.

performance, but the same socket will take an 80487SX maths coprocessor, which effectively reinstates the PC to 486DX status. However, you can't fit both, so you have to make a choice – the OverDrive chip is probably a better bet.

family. The Intel 386 chips are currently made only in two versions: 20MHz i386SX and 33MHz i386DX. The 386SX started off at 16MHz, while the 386DX has seen 20MHz and 25MHz versions.

i486: this denotes Intel's family of 486 processors. Currently, these are the 16MHz, 20MHz and 25MHz i486SX, and 25MHz, 33MHz and 50MHz i486DX.

Microprocessor: the chip at the heart of a PC. It does all the computational chores with bits and bytes shunted in and out of it that translate into an action in a game or application you're running, and processing code read from a hard disk or for an image that's going on to your screen.

Upgradable PCs

There's now a spate of upgradable PCs on the market. Most major manufacturers market PCs that are essentially the same, except that the processor is on a card. So you can buy a 20MHz 386SX machine and simply upgrade it by removing the card and adding a new board with, for example, a 33MHz 486DX. Unfortunately for PC users, these upgrade solutions are often proprietary ones: you have to use a particular manufacturer's upgrade for that company's machine. The upgrade board is fitted with a particular processor, a suitable BIOS for that processor and, usually, system RAM as well.

The upgrade is very easy to perform: take out the old board and slot in the new one. Although easy, the price will depend on what each manufacturer charges and, a more long-term thought, how long upgrades will be provided for that range of upgradable PCs. However, in design terms, you can be pretty sure that all these machines, being pretty new on the market, will work fine with a 50MHz 486DX, and will have hard disks and graphics capabilities to match.

Most suppliers are now marketing upgradable PCs: Acer, ALR, AST, Compaq, Dell, Elonex and IBM, to name but a few, although it's a fairly recent phenomenon. A lot will depend on budgets, but a sensible scenario might be as follows: get a 20MHz 386SX upgradable machine to limit the initial outlay, save up and go for a 486DX.

SPECIAL

The Wizardry Series is the longest running role playing series in the world, with volumes I to V selling an incredible three million copies. Robin Matthews chronicles the development of the series and looks forward to Wizardry VII

Wizardry: role-playing's

Sir Tech Software of Ogdensburg, New York (the quiet giants of fantasy role playing software) is poised to release the latest in the Wizardry Series — Wizardry VII — in mid-1992. This new title is again from the genius of D W Bradley and follows on from the exceptional Wizardry VI — Bane of the Cosmic Forge. It is to be subtitled The Crusaders of the Dark Savant.

However, in the UK, the Wizardry titles are really only known by a handful of enthusiasts. They've only been available through import specialists, and have had no real advertising or promotional support, but this looks set to change with a distribution deal likely to be signed with one of the big boys in the UK.

If this does happen, be prepared to see one of the most exciting releases of the year. For the great majority who may be a little vague about the pedigree of this slumbering giant ...

Seventh heaven

Now turning the crystal ball around and looking forward to mid 92 (the crystal ball needs a clean so don't complain if it's a little later than that ...), we see the latest Wizardry — Volume VII — The Crusaders of the Dark Savant. This takes the range into the 90s with full 256 colour digitised graphics, auto-mapping, full musical soundtrack, 100% point and click interface, plus for the first time indoor and outdoor locations with much of the action being away from the usual shackles and chains deep in the bowels of the earth.

The usual Wizardry 'benchmarks' are included: phased time as opposed to real-time (hear the sighs from those recovering from the final sequence of Eye of the Beholder II); multiple save games; adjustable difficuly levels, and 'intelligent' non-playing characters, etc.

The storyline of Crusaders of the Dark Savant continues from the end of Bane of the Cosmic Forge, and will depend which of its three main endings you completed (the standard, the abstainer's, or the atheist's). Each beginning is designed to give a different slant, reveal specific information and to align the parties in various ways.

Lost and found in space

At the end of Bane the disappearance of the Cosmic Forge meant that the Cosmic Lords could no longer control the Universe, in particular could no longer hide the existence of the legendary planet of Lost Guardia.

This hitherto hidden world was linked with the scientific and artistic mega-genius M Phoonzang, and his 'astral dominae' which in turn is linked with the very power of the universe and of life itself.

Now Phoonzang who had become a god created an entire world — Lost Guardia — in which to safely entomb the terrible secrets and powers of the astral dominae. He also made many creatures to inhabit this world and act as its protectors. There is a rumour that there was a map in existence, but its actual contents and whereabouts are long forgotten.

With Lost Guardia no longer being hidden from the rest of the universe, many have now travelled there seeking to unlock its fabulous secrets. One of those on such a quest is consumed by the pursuit of power and galactic domination: he is the navigator and explorer of all the frontiers of space who uses a legendary black ship, the strange and mysterious Dark Savant.

As for the known worlds, the universe is dominated by two rival races, the Umpani and the T'Rang, the former a fair lot, a race of militaristic pachyderms but the latter a race of arachnoids not to be trusted with your last bowl of curds and whey.

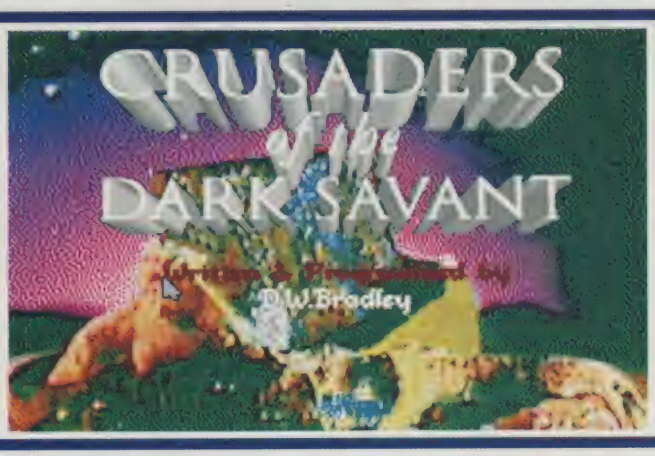
Both of these species (plus the old Dark Savant and his legions) have advance parties on Lost Guardia engaged in a frantic search of the planet for clues and this flurry of activity has also stirred up the indigenous population who, a bit peeved, feel they should protect their own 'birthright'.

The net result is a wonderfully rich scenario with a whole planet teeming with activity. Each of the rivals has many groups of followers competing for the ultimate prize. It is in this environment that your party enters the fray.

"the strange and mysterious Dark Savant"

The product itself has been seen at 'alpha' stage but is nevertheless rather impressive. The interface is very smooth: Sir Tech is obviously paying attention to some of the minor criticisms of Bane. For example, Items are now easily equipped, and you do not have to re-equip all items if you un-equip just one.

The seemingly vast amount of character classes and races available make some



THE STORY SO FAR

1981—Wizardry I, Proving Grounds of the Mad Overlord was released on Apple, Commodore 64/128 and IBM PC. The program ran from floppy disk only, and graphics were CGA. Games then were few and far between anyway, but Wiz I was far ahead of its time. The system revolves around the exploration of a 3D 10-level dungeon leading to a final confrontation with the evil 'Werdna'.

1982—Wizardry II, Knight of Diamonds appeared. Same format as and required Proving Grounds to create characters. Really a scenario disk with another 10 levels. Still used boot disks and CGA.

Wizardry graphics now match the quality of the game's depth and playability. Here you face considerable danger from this swordsman.

Wizardry uses the same 3D, first person viewpoint that many RPGs, such as Beholder and Ultima Underworld, are adopting these days.

A close-up of the curiously named 'munks'. There is an amazing variety of races and professions from which to create your party.

slumbering giant

impressive reading. You can choose from a total of 11 races, 14 professions, two sexes. And for those into statistics and like to impress their gaming friends, this makes for a staggering 1,129,000,342,008 possible party combinations (give or take a dwarf or two or three).

Suicide is painless

The excellent combat system has also been improved with new skills items and a whole new menagerie of 'sword fodder'. Watch out for some of your opponents; the servants of the Dark Savant have an impressive armoury that is a cross between Star Wars and The Knights of the Round Table. Also now included is the ability in combat to effectively 'commit suicide' — useful where you want to re-start a particular fight sequence (in Bane of course this could take many minutes).

The character stats are shown in a much more graphic fashion, with the effect of each equipped item being shown on a 'tailor's dummy' suit of armour. A separate screen is used to show all character details leaving the main screen nicely uncluttered.

Absolute magic

The magic system which was probably the best available has been further expanded with seven more power levels and more spells! Magic is also now presented in a graphic fashion — you first select the character, then the relevant realm (Fire, Water, Air, Earth, Mental or Magic) to select, for example, Air, you point to the animated whirlwind graphic, then you pick whichever of the 90 odd spells you require.

Your journey is likely to start in the eerie Orkogre Forest. Here Crusaders really begins to look the business — the way in which the 'forest' graphics have been created is breathtaking. Similar graphics found in Might and Magic III, or Eye of the Beholder II are very pretty, but really give a feeling of 'bits of wallpaper' or paintings hung on a wall. In those products you can normally see a break in the trees several squares ahead — mapping is easy and very little extra atmosphere is created.

Seeing the wood for the trees

In Crusaders, however, so much time and trouble seems to have been spent on this aspect of the gaming world. The detail is extraordinary with individual gnarls, branches and holes being visible on the trees. The breaks in the trees are often only discovered when you are standing on that square so that mapping and exploration becomes a real art. These areas of the game are not just added to make the product look pretty — they genuinely create a much tighter environment, with an extremely realistic and even claustrophobic atmosphere.

Add to the graphics and game system the other ingredient that makes the Wizardry series stand out — the puzzles. No mere button pushing or wall banging here — a series of testing and tricky problems that elevate Crusaders out of the pack. These problems have always given Sir Tech an edge and Crusaders is no different. The other point as regards these puzzles is they are not quite as daft as some involving transatlantic logic. If you're stuck, a gallon or so of coffee and/or a cold shower will normally create the inspiration you need.

If any criticism of the Wizardry series is justifiable, it is that in previous volumes the graphics and presentation have not been up to the same high standard as the general depth, game system and playability. Bane of the Cosmic Forge was an excellent product, it has sold extremely well, but is has suffered in comparision with the VGA 256 Colour graphics of Might and Magic III and Eye of the Beholder I and II.

Crusaders really looks the part. Sir-Tech claims (with some justification and a remarkable track record) that its system holds most true to the spirit of true fantasy role-playing. If Crusaders is the same quantum leap ahead as Bane was, who can argue? PC

1983 — Wizardry III — Legacy of Llylgamyn was published. Not a village in rural Mid-Wales, but another scenario disk. Six levels but with a nice touch that half the levels were accessed by a 'good' party, which then changed alignment to allow an 'evil' party access to the remainder. Remained CGA graphics and still only ran from floppy disks.

1987 — Wizardry IV — Return of Werdna marked the end of the 'first generation' of the Wizardry series. Again required Proving Grounds — an approach continually limiting prospective sales. Excellent concept with you playing the villain imprisoned in Proving Grounds, using the monsters as your allies! Almost too difficult in parts. The last CGA/floppy release.

1988 — Wizardry V — Heart of the Maelstrom was a big step forward. It was a standalone game not needing Proving Grounds. For the first time EGA graphics were included and there was more NPC interaction. Still a tad linear but compared well with the competition. The aim was to travel through the various mazes and rescue the Gate Keeper trapped at the centre of a huge magical vortex.

1989 — A quantum leap forward with Wizardry VI — Bane of the Cosmic Forge. A real classic RPG with good plot, interface and character system. Probably the best FRPG system on the market. Showed what can be done with EGA graphics, sound board and mouse support (on second release). Recommended for anyone who has mildly enjoyed Might and Magic, Bards Tale, SSI's AD&D games, the Ultima series, etc.

The essential guid

COVER STORY

Flight simulations have a long and honourable history on the PC. Whether your preference is for a 'technical' simulation, or you just want a good old-fashioned dogfight, you'll find a program to suit you here, in this compilation selected by Peter Worlock.

CHOPPER SQUAD

Like the civilian division, the segment dedicated to rotary-wing aircraft (or helicopters) is slim, but we can be grateful that the two contenders include one of the three best flight sims available.

LHX Attack Chopper (Electronic Arts, £39.99)

Apart from the Chuck Yeager range, the only really memorable simulator to come from Electronic Arts is LHX Attack Chopper. Allowing you to take control of three modern–day helicopters and one helicopter–cum–aeroplane (the Osprey for you fanatics out there). It's really got some competition with MicroProse's excellent Gunship 2000, and even though it's not as good, it still manages to hold its own in some very important areas.

Control is somewhat minimal, allowing you to get straight into the action and not worry too much about keeping it up in the air.

The graphics are very hit and miss.The sky is blue, the sea is blue, the desert is yellow, the grass is green , not much detail there, but the polygons and external viewpoints are excellent, extremely fast and more detailed than MicroProse's offering.

It's not as solid as Gunship either, with a very free hand (and therefore unrealistic) approach to missions. There are lots of targets and a good variety of opponents including enemy helicopters, planes, ground-based missile batteries, tanks — even a few harmless animals that can be gunned down by the psychos among you. In short, LHX is a very enjoyable flying game, but it is to flight simulation what a Christmas panto is to Shakespearean theatre.

Gunship 2000 (Microprose, £39.99)

On the other hand, while most would consider it to be the best thing to enter the helicopter sim battle since the invention of the rotor blade, Gunship 2000 isn't without its faults either. Although they are far from awful, MicroProse is really going to have to work on its polygon modelling if it wants to bring it up to the standards of, say, F29 Retaliator, JetFighter 2 or Red Baron. It could also be a lot more user–friendly, allowing you to have free range over your external views and guiding you through the pre–flight areas with a little more than what's offered in the manual.

Of course, it is supremely playable and the added dimension of helicopter 'teams' adds so much, even if it is tricky to get the other pilots in your group to do what you tell them to. Gunship 2000 is the premier helicopter sim and is worthy of the name classic.

e to PC flight sims

Flight is one of the oldest and most abiding dreams of our species — a tradition that stretches back to the myth of Icarus and doubtless beyond.

Today, flying has never been easier or more commonplace. It's arguable that most Britons have experienced the fulfilment of this desire, thanks to the dawn of cheap charter flights. But that is not really enough; we want to *fly*: to swoop and soar, to wheel about the sky like eagles.

And while that's technically possible, there's the small matter of the pilot's licence at 40 hours plus, multiplied by £90 an hour, not to mention the fuel, the cost of the plane, somewhere to park it. Call it £30,000, minimum. Alternatively, you can buy a fast PC, a VGA monitor and a flight simulator and save yourself £28,500.

Although the vast majority of flight sims available are *combat* games, would-be aviators of a pacifist bent are well served — if not in quantity then certainly in quality. Flight Simulator 4.0 and ATP — perhaps to compensate for their lack of death-dealing excitement — rely on creating an unmatched sense of realism for their appeal. The world you fly in is the real world, with huge areas accurately modelled from the Golden Gate Bridge in San Francisco, through the tourist attractions of Manhattan island, to the familiar landmarks of western Europe, including Stonehenge and the Eifel Tower. A similar, exacting degree of accuracy is imposed on the way the aircraft are modelled. Only the civilian sims, for example, let you recreate instrument-only flights; and while the combat sims provide a limited variety of weather, only FS4 and ATP provide you with the challenge of an instrument landing in dense fog, or racing for home ahead of a thunderstorm.

CIVILIAN AIRCRAFT

Flight Simulator 4.0 (Microsoft, £29.95)

More conveniently known as FS4, Microsoft's is for many the definitive flight sim, with a long tradition of its own. It appeared at almost the same time as the original IBM PC. and developed such a cult following it quickly became the prime test for the infant PC clone industry: if your machine ran Flight Simulator you were officially 'IBM compatible'; if it didn't, you were doomed.

Although FS wasn't the first of its kind, it did set a precedent in being the first program for personal computers that could claim true 'simulator' status (as opposed to the flying 'games' that were its rivals). Its highly accurate reproduction of a small private plane, and its astonishing modelling of real world scenery, set the standard by which other simulators would be judged — and usually found wanting.

Today's version has not betrayed the original vision: the simulator is still hugely accurate in both flying characteristics and in world modelling. Instead, the availability of more processing power has allowed the authors to extend the simulation. Version 4.0 gives you a wider range of aircraft, including a Lear Jet and a glider; and a challenging weather simulator.

And a scenery and aircraft designer lets you model your own favourite bits of the world, and add new planes (dozens, up to and including a 747 Jumbo, are available). In fact, this is less a simulator, more a way of life. If you want to know what flying is like, this is as close as you can get without spending huge sums of money. But be warned: it takes a peculiar kind of mind-set to enjoy FS4. The nature of the program means you're in competition only with yourself; you need a lot of self-discipline to set your own goals and try to achieve them. The program won't know if you cheat, and it doesn't measure your progress. Sightseeing in FS4 is fun for a while, but unless you're serious about flying the appeal can quickly disappear.

ATP (SubLogic/US Gold, £39.95)

What FS4 does for small aircraft, ATP does for big ones. Airline Transport Pilot simulates the planes of the commercial airlines, from the Boeing 737 on up. Otherwise, ATP has the same obsession with accurate flight models and real-world scenery that is the hallmark of FS4.

Which isn't surprising since both were created by the same company, SubLogic (Microsoft is only the publisher of FS4). The similarities between the two programs are instantly apparent: both use the same flight model, ATP can use Flight Simulator scenery disks and the control systems are more or less the same. But there are differences, too. The instrument panels accurately model the real thing and you don't need to be an expert to spot the difference between the cockpit of a single-engine light aircraft and a 747 jumbo.

Other changes include a better weather system and a much smarter air traffic control system that adds a lot to the sense of realism. But ATP also shares many of FS4's drawbacks: while there is an element of structured gameplay (you have to develop a career as a commercial airline pilot) you don't stand a chance without hours of serious practice first and in that crucial area you're on your own.

While soaring peacefully through civilian skies may be politically correct, most of us would rather be annihilating something with six feet of high-explosive-tipped steel (that's a Sidewinder to you, sir). If that sounds like you, too, then welcome to the main ground of PC flight simulators. Within the wide field of air warfare, there's something for every taste. From the leisurely (but deadly) elegance of World War One biplanes over the Somme, to the heavy metal, screamin' eagle fighter-bombers of Desert Storm, PC pilots have it all.

"You look at air war casualties in World War I — it was an absolute nightmare. Survival rates for British pilots in 1916 were about zero — four missions and they were dead." So says Williamson Murray, professor of aviation and military history, proving that if the fliers of the Great War were knights of the sky, they were damned short-lived ones. Perhaps it was just that their one-on-one duelling looked preferable to the fate of those in the trenches who were dying by the thousand. But whatever the reality the myth, the image of Biggles, silk scarf dancing in the prop wash, bagging a brace of Hun before tootling home for tea lives on.

Although for the British World War 2 inevitably means Spitfires and the Battle of Britain, there were other aircraft involved — notably the P51 Mustang. It was the P51 that allowed the Allies to carry the war to Germany, escorting bombing missions right to Berlin itself. While the Battle of Britain features in one simulator from the period, it's the later stages of the war, and the Mustang, that are better represented.

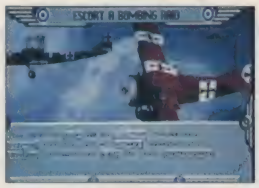
When we reach the modern age, the flight sim really takes off. There are enough simulated aircraft to form a squadron, with new ones arriving all the time. And it's here that you find the classic dilemma in flight sim design: do you go for realism, or for gameplay? In fact, the best of these prove that there's no dilemma any more:

FLIGHT SIMS AT WAR

Knights of the Sky (MicroProse, £39.99)

Welcome to the war. It's 1916 and your goal is survive to the armistice, and to retire as ace of aces — the undisputed best flyer on the Western Front. On the way you'll have to fly dozens of missions, from escorting reconnaissance flights to bombing trains and, of course, dogfighting hundreds of enemy planes. As in Gunship 2000, MicroProse has incorporated elements of the role-playing game and your pilot develops through time, earning medals and promotions and tracking the progress of rival aces. The graphics are good, especially the rendering of other planes, and the simulator works well (and includes a variety of weather). The challenge of flying several different planes from the tricky Sopwith Camel to the superb Spad adds to the appeal. In the excellence stakes, Knights could be a big winner, but ...

Red Baron (Dynamix/Sierra, £39.99)



Red Baron, from Dynamix via Sierra, could be the identical twin of Knights of the Sky. Both cover the same period, with the same theme, flying the same planes. Graphically, the differences are more a question of style than quality. MicroProse has opted for a finely drawn, cartoon style while Dynamix prefers a scanned-and-digitised approach. Red Baron does gain an edge in its better use of time and weather, so that dawn and dusk missions are something special. A

COVER STORY

*The **essential** guide to PC flight sims*

THE MODERN AGE

F29 Retaliator (Ocean, £34.99)

Ocean's air warrior is a good example of the game vs simulator argument. It has to qualify as a game since the aircraft it models don't actually exist yet, and other aspects of the design emphasise that approach. Graphics are well up to standard, and there's a challenging variety of air and ground targets to blast away at. The scenarios also provide four different landscapes from the desert of the training school in Arizona, to the ocean and tropical islands of the Pacific.

But there are key drawbacks. First and foremost, the landscapes are fictional which detracts from the appeal; and they are far too small — you can fly off the map in about one minute. Second, the odds are stacked in your favour with weapons systems that make mincemeat of the opposition, and enemy pilots have no intelligence whatsoever. There's also a major problem with landing your aircraft. The runways are way too small and ending a mission without ejecting is an art in itself (It's also another example of the British mastery of the lousy manual.)

F29 is a reasonable choice if you want airborne action in short, sharp bursts, but you can get that from other packages that also provide more lasting challenges when you feel ready for that. More of an arcade style game than a serious simulation, F29 still delivers in the graphic and atmosphere department. It's just that you may well outgrow its challenges sooner rather than later.

F16 Combat (Digital Integration, £14.99)

A harsh judgment, perhaps, but Digital Integration's simulator — now available in budget release — has only one merit: to demonstrate how fast the flight simulator has developed in the past two years. Voted best simulator of 1990, the flight model itself looks good, but everything else is badly dated. Graphics are only average, and EGA-only; the "manual" is an embarrassing 16-page pamphlet. Even at a budget price, it can't be recommended.

F15 Strike Eagle II (MicroProse, £35.75)

F15 was one of the first combat flight sims and an early entry in MicroProse's long line of smash hits. This, the second version, takes the fast and furious action of the first and adds the improved graphic techniques the company learned in years of subsequent products. The result is fast, fun — but a bit shallow. In many respects, it looks more like a brain-damaged F117A than an uprated classic. Most of the combat theatres are the same in both programs; most of the screen displays are shared, and the common graphics system makes the

bigger difference is that Red Baron gives you more options. In addition to the obvious training flights and the war-long campaign mode, Red Baron lets you fly single historical missions, or go head-to-head with any of the real aces (whose tactics are modelled with as much care as other aspects of the simulator). The Baron also boasts some outstanding work in the audio department, and that — coupled with the best features for action replay and video-style editing in any flight sim(you can save your missions and edit them into a real thrilling war movie) — make it the winner of the WW1 pairing.

Their Finest Hour (LucasFilm, £39.99)

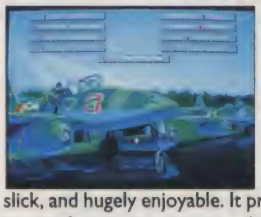
A couple of years ago, LucasFilm came diving from nowhere to establish itself as one of the key players in the flight sim business and Their Finest Hour was the game that won the company the initial accolades. TFH lets you play either the RAF or Luftwaffe during the Battle of Britain. As the former you get to fly Hurricanes or Spitfires; as the latter you get to have rather more fun with ME-109 fighters but also the curved–winged Stuka dive-bombers and the bigger bombers like Heinkels and Dorniers. In these you fill all the roles, dashing about from pilot's seat to bomb sight, to rear gunner picking off the Spits.

Each mission is linked to the overall campaign: if the Luftwaffe manages to destroy British airfields, the RAF can fly fewer planes in defence. Conversely, if the Brits are winning, there are fewer bombers to press the attack.

If the campaign seems daunting, you can fly training missions or fight single dogfights — but the campaign is the heart of TFH. Excellent graphics, sound effects and a top-notch presentation (the manual is brilliant) would have made Their Finest Hour a must-have if Lucasfilm hadn't brought out SWOTL (see right).

Their Finest Hout still represents good value for money and even if SWOTL is a better game, it's still worth taking a look at this original, if just for the thrill of flying over the white cliffs of Dover.

Secret Weapons of the Luftwaffe (LucasFilm, £40.99)



After the Battle of Britain, LucasFilm turns its attention to the later stages of the war, and the setting for SWOTL is the air war over Germany. It's fast, graphically slick, and hugely enjoyable. It provides an enormous range of options: training modes, single missions, campaigns, a separate strategy game and a campaign game where you assume the personality of one pilot and fly a tour of duty. In the strategy mode, you direct allied bombing missions with the aim of halting German military production; or you can control German resources, allocating aircraft to protect vital installations.

SWOTL is a huge game, with enough death-dealing action to satisfy the most hardened fighter jock, coupled with a challenging strategic mode for the intellectual types. It's an evolutionary leap ahead of TFH, and one of the best sims available.

external scenery all but identical. For a bit of quick 'n' dirty winged warfare, F15II is a better bet than most, but it's still hard to see why you'd bother when you can get much more from Chuck Yeager's Air Combat, F117A itself, or Falcon 3.0.

MiG-29 SuperFulcrum (Domark, £40.95)

You can tell the Cold War is over — it's hard to find a sim that still pits NATO against Soviets. MiG-29 is no exception: the good guys are the United Nations, the bad guys are "South American rebels". Damned well-equipped rebels, too, with state-of-the-art weaponry at their disposal, and several airbases, supply depots, roads and a railway under their control, which makes for a wide variety of missions for you, including aerial dogfighting, and ground attacks against everything from unarmed trucks to tanks and SAM missile batteries.

Controlling the plane is simple enough (although there's a complex flight mode for those who want extra realism), the game is essentially an extended campaign so it has long-term challenge. On the negative side, the sound effects are pitiful, the manual is slim, badly written and uninformative (why are British companies so bad at this?), there's no weather, and all flights take place in daylight so the whole affair has a curiously timeless air. In short, it's good but not good enough to compete with the best.

It's also worth noting that Mig–29 SuperFulcrum is a sequel to MiG–29 Fulcrum, Domark's original Soviet sim which is even worse.

F117A Stealth Fighter (MicroProse, £39.99)

The Stealth bombers were one of the great allied successes during Desert Storm; F117A gives you the chance to discover why. Unusual subjects always give a simulator added appeal, but there's more to it than curiosity value. As we've come to expect from MicroProse, just about everything here is right: from the high-value packaging with maps, excellent manual and keyboard overlays, to the stunning in-flight graphics (especially during night missions, the natural element of the Stealth machines). For a while, F117A looked like the business — until the arrival of Falcon 3.0. It's not easy to pinpoint where MicroProse failed but two things suggest themselves. First, the control system is unconvincing. Partly this is simple hardware limitations, but even on reasonable hardware the controls fell into two positions: smooth but unbearably slow; or fast and unplayably jerky. Second, excellent though the graphics are, they now look firmly of the past compared to the state of the art displays of Falcon.

One example demonstrates the difference. In F117A, as in every other simulator, there's little sense of terrain: mountains sheer suddenly (and unconvincingly) out of billiard-table landscapes. In Falcon, even in the lesser display modes, the use of fractal landscapes gives you a constantly shifting terrain that transforms gradually from rolling plains to gentle hills to towering mountains. The sense of realism is incomparable.

It's way, way better than the original F19 Stealth Fighter though... much better.

accurate sims can have the best of the gameplay too.

Playing the aces

Although the competition has never been tougher, and even though there are many packages that rate somewhere between good and great, compared with only one or two that could be rated as bad, choosing the winners isn't as difficult as you might think, although it would be an artificial judgment to say that one of these packages was an absolute best, beyond the others.

But before getting to the top three aces, there are a couple of honourable mentions. First among these is Secret Weapons of the Luftwaffe. SWOTL works on so many levels — simple flight game, serious flight simulator, challenging strategy game, excellent educational material. Second honourable mention goes to Red Baron for graphic excellence. This is less a program than a work of art — but you need serious hardware to enjoy it. Anything less than a fast 386 will turn the experience into a faltering, flickering irritation. Of my three top flight sims, the first is — let's be honest — a bit of a fix.

Nobody has done more for PC flight simulation than MicroProse and it had to figure in the medals. But Knights of the Sky gets edged by Red Baron, F-117A is overtaken by Falcon 3.0, and F15 Strike Eagle II is too much of a game to qualify.

But Gunship 2000 gets the accolades. Not only is it the best helicopter sim, but the different nature of chopper flight and combat tactics make it stand out from the crowd.

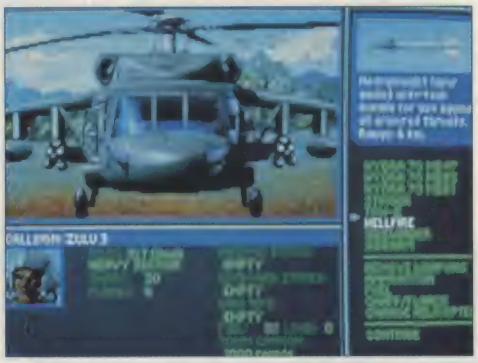
Second up is Chuck Yeager's Air Combat. Not an absolute classic because it has some limitations — notably the lack of a real campaign mode — but it's tremendous fun and capable of some excellent performances on fairly humble hardware.

Finally, there's Falcon 3.0. A flawed masterpiece, but one that is already far ahead of the competition and can only improve as the problems get fixed by Spectrum Holobyte. To be fair, Spectrum Holobyte is working hard to fix the bugs, and the key flaws uncovered in PCR's review in February have already been corrected for a second-time-around release by MicroProse. But there are many more, and such is the nature of bug-fixing that each "corrected" release seems to introduce new ones.

The presentation is unsurpassed, the flight model is utterly convincing, and the huge variety of missions in three different theatres, with an infinitely variable degree of difficulty, ensures that Falcon's appeal will burn long as well as bright. A stunning achievement.

Gunship 2000 (MicroProse, £39.99)

Gunship 2000 has all the hallmarks we've come to expect of MicroProse: the great manual, the keyboard overlays, a good use of graphics and excellent sound effects. Like its earlier namesake, Gunship 2000 lets you play in two campaign areas — the Middle East and Europe — against opponents of varying difficulty. Within each campaign there are dozens of missions, and you have a good variety of aircraft to choose from, from the ubiquitous Apache and Commanche gunships to the more nimble (and vulnerable) Defender. The big new twist in Gunship 2000 is a new command mode. No longer are you just responsible for your own performance, you have other choppers along for the ride, following your orders. This adds enormously to the challenge and the appeal, although it can be frustratingly difficult to get your wingmen to do exactly what you want them to. No matter which other flight sims you buy, you'll want Gunship 2000 as well.



Chuck Yeager's Air Combat (Electronic Arts, £34.99)

If you want fast, furious action in a simulator rather than a game, this is the one. You can fly either of two opposing planes from three periods: a P51 Mustang or Focke-Wolf 190 from WW2; F-86 Sabre or MiG-15 from Korea; and an F-4 Phantom or the MiG-21 from Vietnam, or you can mix and match letting you fly an F4 against, say, a P51. While the action is often so fast you don't have time to enjoy the scenery, the aerial graphics are outstanding. Aircraft are rendered in detail, cockpits are accurate and well-drawn, and graduated skies – from deep blue overhead to near white on the horizon – add a fine finishing touch.

If it has a flaw it's the lack of a campaign mode, but there's lots of variety in the missions. In many ways CYAC is the best flight simulator available: if you're a player you can live without it; if you're a *flier* you have to own this.

Falcon 3.0 (Spectrum Holobyte/MicroProse, £49.99)

Falcon 3.0 rewrites the book when it comes to flight simulation. It has everything: digitised speech, cinematic music, fast solid-filled 3D graphics, gorgeous fractal landscapes, digitised video sequences, real-world combat zones accurately modelled to within a third of a mile, a huge variety of missions and war scenarios, in-flight recording and movie-style editing and playback — and bugs, lots of bugs. It's worth waiting for MicroProse's re–launch before buying it, as at least you know everything will be fixed. There is nothing to touch Falcon 3.0. It has the best graphics, most challenging missions, greatest variety of missions, and the most realistic simulation. You can also set difficulty levels to the point where you can simply take-off and mix it in for fast dogfighting action. To coin a phrase, it's better to have flown and crashed in Falcon 3.0, than to have never flown it at all.

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GS - 2000

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SILENT SERVICE II

15 II - DESERT STORM

... it's like flying the real thing!

"...for many recent releases a 386 PC is a minimum requirement." *PC Format '92*

It is a simple fact of computing that the more information you try to process the slower everything becomes. Not much fun when the subject is Gunship 2000 in glorious 256 colour graphics. Try playing the latest generation simulations on a 286 for example. The graphics are very 'jerky' and the response is fustratingly slow. The effect is unconvincing and not worthy of simulator status.

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Review

Create your own cartoons with The Disney Animation Studio!

It's the merry, merry month of May once again and we've another 13 of the latest PC games between now and page 90. As usual, our team of hardened games-playing professionals cuts through the fat and gives you the complete low-down on each game. If you want to know what you should be spending your money on, this is the place to find out.

Alternatively

... we believe games should be placed in context. If you like the sound of Pacific Islands, for example (see page 60), you'll be interested in other games of a similar style. In all our major reviews, we offer comparisons with other titles on the market, some of which may be more suited to your tastes.

Hardware requirements

... there is nothing quite so annoying as discovering your hard disk has run out of space when you're half-way through installing the latest multi-disk epic – and the manual doesn't always tell you how much space you need. We do, though. We also tell you how many disks come in the box, so that floppy-only owners will know how much disk-swapping is likely to be involved.

Tech specs

... our no-messing, no-guessing guide to the hardware supported by the game. And if there's anything unusual about the specs, or any additional information, we note it in the accompanying comment box.

Two minutes

... the nearest thing to seeing the game in action, as we take you through selected screens and note the gameplay required. You'll find the reviews concentrate on the atmosphere generated by the program and the gameplay involved, rather than regurgitating reams about the background story. You can always read the novella when you buy the game – our job is to help you decide whether you want to buy it in the first place.

Our rating system

... we're as fed up as you are of over-complicated rating systems that mark everything from packaging to intro sequences and tell you nothing about the real quality of the game. That's why we've made our rating system simple and consequently useful. We give a single mark out of 10, based on the game's overall quality and how enjoyable it is to play.

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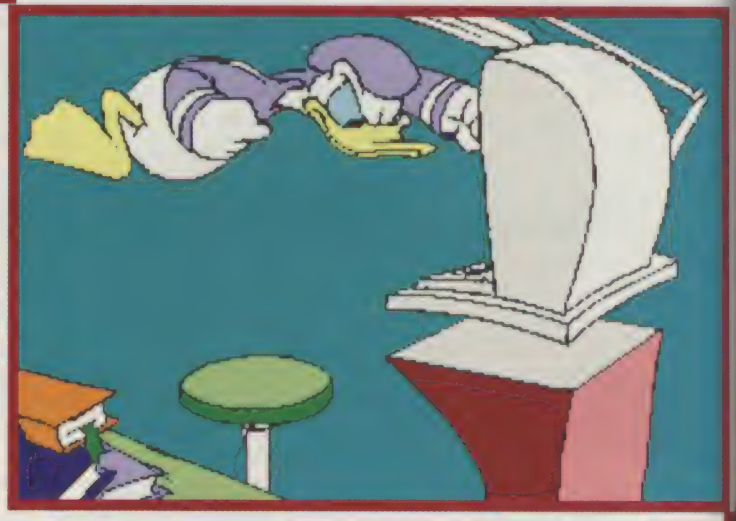
THE GAMES THAT GOT AWAY 90

A quick round up of everything that we promised you last month but failed to deliver due to circumstances beyond our control. Lame excuses ahoy!

■ Disney Animation Studio ■ Infogrames
■ (071) 738 8199 ■ £99.99

Now you can recreate the magic of Walt Disney with the official animation package. But how does it compare with the existing competition?



Walt Disney has become as much of an American institution as Coca-Cola and, like the latter and MacDonalds, has managed to install itself in most of the industrialised countries in the world. You can already visit MacDonalds and buy Coca-Cola in Moscow and I wouldn't be at all surprised to find that, before the end of the century, Gorky Park is home to a huge Disney theme park.

But, right back in the early years of this century, Disney's success was all down to one thing, the quality of its short animated films, and subsequently its full-length animated features. The fact is that Walt Disney pioneered the cel based animation that is still the mainstay of the animation industry today, and that's "cel", short for celluloid and nothing to do with cells. Steamboat Willie, his first animated film to feature Mickey Mouse, may look primitive today, but it was revolutionary when Disney and his team created it. Even more remarkable was the first full-length animated feature film, Snow White and the Seven Dwarves, which is just as enjoyable today as it must have been in 1937.

That first feature took 750 artists three years to produce. Nowadays Disney still produces first class animated feature films, but they certainly don't require anything approaching the manpower or time that Snow White demanded. One of the major reasons for this is the role of the computer. Using the most sophisticated animation software and minicomputers it is now possible for an artist to draw only the extreme frames of a characters movement and have the computer do all the inbetweening. This is the process of drawing all the intervening frames, which was previously the job of apprentice animators. The computer can also be relied upon to automatically 'ink' individual cels once the first cel of a sequence has been done manually.

Given Disney's dominance in this new field of animation, this package represents a welcome opportunity for anyone to try their hand at recreating some of that magic using computers, albeit on a much smaller scale.

The first thing to note about Disney Animation Studio is that it won't provide you with any of the advanced features I've just mentioned. PCs just don't have the processing power or the huge amount of memory and disk storage required to undertake automatic 'tweening or colouring. So what do you get?

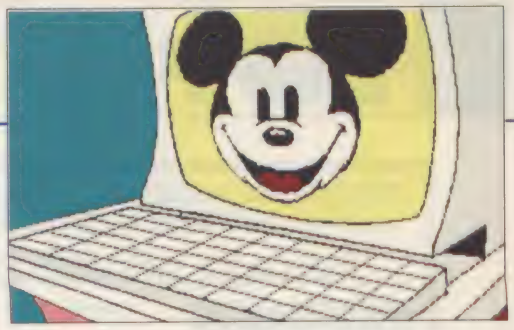
Disney Animation Studio is essentially a facility for producing cel based animation with a computer. A real cel is a piece of clear acetate on to which the main animation is drawn and which is then placed over the background artwork. This system allows a single piece of background artwork to be used for several frames, while only the figures which are actually animated need to be redrawn. Obviously, Disney Animation Studio uses simulated cels, but the principle is exactly the same. You produce your animation cel by cel and then colour it and add one or more backgrounds.

The package actually consists of five sections: Pencil Test, in which you create a rough monochrome animation and test it; the Exposure Sheet, on which you order the cel sequence, set up the correct timing and add sound effects; Ink and Paint, which is used to clean up the pencil test and add colour; Camera, a utility within Ink and Paint for preparing and adding backgrounds; and DAS, the supervisor program which lets you switch between the various utilities. Incidentally, the Pencil Test and Ink and Paint can be loaded separately if you have memory problems.

Getting my hands dirty

The temptation, when reviewing a product like Disney Animation Studio, is to read the manuals, work through the tutorials, tinker about a bit, and then write the review. Unfortunately, while the first impression a product of this nature makes is often good, it's only when you actually start using it in earnest that problems come to light. The answer is to use it for its intended purpose and consequently the downside should become as apparent as the good features. So that's exactly what I've done, created a very short (20 second) animation and taken it through each of the required stages, from Pencil Test to Ink and Paint.

The animation has a suitably computer-related theme and



Disney Animation Studio

features a cute-looking 8086 PC, which is fed a pirate disk and subsequently explodes. I know, there's not much to the plot, but it is enough to put the program through its paces.

The first step in producing any animation, however short, is to story-board it. The story-board is a sequence of rough pictures which show the main developments in the plot. This, unfortunately, is still a pencil and paper job, but however tedious, it is absolutely essential that you have a solid storyline to work to.

This animation of Donald Duck is included with the software as an example of the sort of thing you can produce. There is also a mono version for users with limited memory.

Having produced the story-board you can now get down to work on the actual cels. Pencil Test is the utility that you will use to do this. The program enables you to produce a monochrome outline of the animated figures on each cel. At this stage of the process you don't want to be too exact, but just produce rough images so that you can quickly see an approximation of the complete animation. This will give you the opportunity to spot any problems, or sequences which don't work, before it's too late to do anything about them.

You are provided with a selection of tools with which to render your rough test, and these resemble a subset of the sort of tools you would expect to find in a standard art package like DeLuxe Paint. There are two freehand tools, solid and dotted line, straight line and arc tools, filled and unfilled circles, ellipses, and rectangles, a fill tool, and a text tool, which has an accompanying small selection of fonts. The only advanced tools you get are a magnify option and the ability to pick up and manipulate brushes (more of which later).

You might think that the tools I've just mentioned are perfectly adequate for creating simple black and white sketches, and 80 per cent of the time you'd be right, but even in the short animation I created I found these tools inadequate for what I wanted to achieve. I needed a perspective effect to show the disk as it zooms in towards the computer. While I could have painstakingly worked out the positions of the disk edges manually, in the end it was easier to create the effect using Deluxe Paint II Enhanced and then import it into Disney Animation Studio.

In perspective

This brings me nicely on to a word of warning. Disney Animation Studio won't directly import Deluxe Paint II Enhanced files, you'll have to convert them to standard Deluxe Paint II files first. Even then Pencil Test somehow managed to invert a monochrome DeLuxe Paint image.

It would have been nice to have seen a few more features in Pencil Test. All right, maybe a perspective facility is going a bit far, but the ability to alter the weights of lines isn't too much to ask for surely? Having paid nearly £100 for this product, it

would be quite upsetting to have to shell out another £100 for a fully-featured drawing program to accompany it.

As I mentioned before, Pencil Test does support a brush grabbing facility. You can grab any rectangular section of a cel as a brush and then paste it back in a different position on the same cel or any other cel. There is also a range of standard brush manipulation tools available. These enable the image to be resized or rotated, and saved for later use.

The brush feature does definitely come in handy for animation because you will often want to duplicate sections of a cel for use in later cels without having to copy the entire thing. This was certainly the case with the computer animation, in which the eyes go through several stages which repeat at a later stage.

By the skin of your onion

Where Pencil Test comes into its own is in the animation specific tools, which really do make up for the deficiency in the general drawing tools. You can easily delete or insert cels, or shuffle the order of those that you have already created. It is also an easy matter to duplicate cels, which is useful when, as will frequently be the case, there are only minor changes to be made between cels.

The feature that makes a world of difference is the 'onion skin', which shows the last three cels as faint outlines beneath the current cel. This makes positioning a breeze because you can see exactly how the changes you make relate to the previous cels.

You can see your animation instantly by clicking on the projector icon, but it will be played 'raw', in exact cel sequence, without the correct timing. To get the timing and cel sequence exactly as you want them you need to set up an exposure sheet.

The exposure sheet is the key to getting the timing of the animation exactly right, and, as every student of comedy knows, timing can mean the difference between a gag getting a laugh, or going down like a lead balloon.

The exposure sheet is essentially a sequence of events ordered by frames. Contrary to what you might expect, one cel does not always correspond to one frame. In fact, in much professional animation, each cel is shot twice.

That means that while the film is running at the standard speed of 24 frames per second, the actual cel rate is 12 per second. That might sound like a waste of film but it's done for a very good reason. Twelve cels per second is a high enough speed to give a good illusion of motion, but if the film was run at 12 frames per second, not only would it be incompatible with most modern projection equipment, which generally won't switch below 18 frames per second, it would also flicker noticeably. (Incidentally, for those who like to know these things, the gate of a modern projector gets so hot that at speeds much below 18 frames per second the film would just melt.)

So, after all that hard work, you finally get to view your animation in glorious PC colour. My effort may not compare with the Disney originals on the opposite page, but it does show what can be achieved using The Disney Animation Studio with just a little effort.

Because you will be using a computer and not celluloid, you don't have to worry about such practicalities and you can run your animation at anything from one to 30 frames per second. Once you've set up your frame rate you have to decide on the sequencing of cels. These don't have to be used in numerical order: you can skip about between them and display each cel as many times as you like. This is handy if you have a static screen, such as a title screen, since you can just keep using the same cel until the required time has elapsed, rather than duplicating the cel repeatedly and thereby filling up valuable memory.

There is nothing quite as much of an anticlimax as a silent cartoon, so it's a great relief to find that a good sound facility has been included in the Disney Animation Studio.

To be able to use sounds, however, you will require either a Sound Blaster, Tandy Sound, or the Disney Sound Source. A reasonable range of cartoon effects are supplied with the soft-

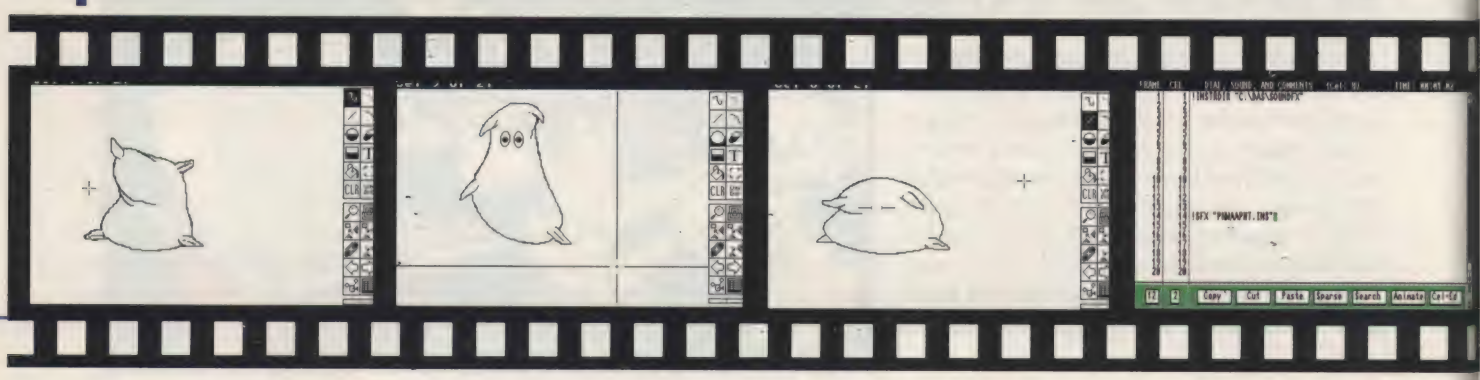
TWO MINUTES OF ANIMATION TRAINING

The Getting Started manual introduces you gently to the complete process of animation.

You begin by adding eyes to a pre-drawn bouncing sack. These help to give it an anthropomorphic quality.

Adding closed eyes to the sack as it squashes heightens the effect of the animation and gives the sack life.

The next stage is to complete the exposure sheet by adding a sound effect at the moment of the bounce.



ware, ranging from whizz noises to UFO sounds, and if you have a sampling device you can always add your own.

The sounds can be used in one of two ways, either as standard effects, to be played back at a set speed for a particular number of times, or as notes. In the latter case you can specify the exact pitch along with an octave number, so KEY C OCTAVE 5 would yield middle C, for instance.

Sound effects are easily added by a single line in the exposure sheet, and a good cut and paste facility means it's no problem if you change your mind about where effects are to be placed.

Painting by numbers

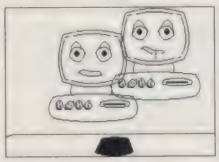
Once you're happy about the way your animation is running it's time to bring it to life with some colour. This is done using the Ink and Paint section. If your initial drawings are very rough, it is probably a good idea to tidy them up in Pencil Test first, because the range of tools available to you in Ink and Paint is severely limited. The solid and dotted freehand tools remain, as do the magnify and zoom tools, but the other drawing tools have been replaced by three types of fill tool. These enable you to do a normal fill to boundary, a dithered fill, which mixes two colours to create a third, and a fill to a boundary defined by a selected colour. The latter is extremely useful, because if you have created two objects as outlines which pass across each other, the front object can easily be filled without the rear one interfering. This means you won't have to be too particular about removing hidden lines in Pencil Test. The dither fill effectively gives you an extended palette, so, even if you are working with a real palette of 16 colours, you have a virtual palette of 136 colours to choose from.

One of the more powerful aspects of Ink and Paint is colour cycling. You can create up to six different colour ranges in which the palette is automatically graduated between two colours that you pick. These ranges can then be used to set up a colour cycle. I used this to get the effect of the explosion at the end of my animation. Not only was this very effective, it also required just a single cel.

Facilities like colour cycling can also be found in other paint packages, but Ink and Paint provides an additional powerful feature, called Camera, which enables backgrounds to be placed behind each cell without interfering with or overwriting existing cel data. This is achieved by two processes, the first of which involves setting up a frisket. The frisket is essentially a colour mask; on a copy of the palette you indicate which colours are used by your cels and these are then treated as solid and will mask portions of the background that lie beneath them. Any colours not indicated will allow the background to show through.

The second process is executed automatically by Camera, which remaps the background palette to match the foreground palette or vice versa. Taking advantage of this, I set up an approximation of the DAS palette in Dpaint II Enhanced before I used it to create the background artwork, so the actual colour change after the art was imported was minimal.

It is a fairly easy matter to produce and import background art using another paint package. In this instance I used the coordinates display in Pencil Test to define a rectangle representing the location of the computer, and then based the background around this. This method enabled me to include the keyboard as part of the background rather than having to place it in every cel.



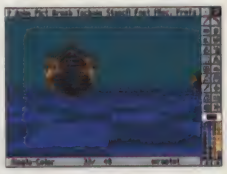
Th.. th.. that's all folks!

When you are finally happy with your animation, you can make a secure version of it. This version can't be altered and can only be run using the Public Domain utility Flick, which is included with the package. This will load and run your animation exactly as intended, with the correct timing and sound effects, and independently of Disney Animation Studio.

ALTERNATIVELY...

Deluxe Paint Animation

Electronic Arts, £99.99



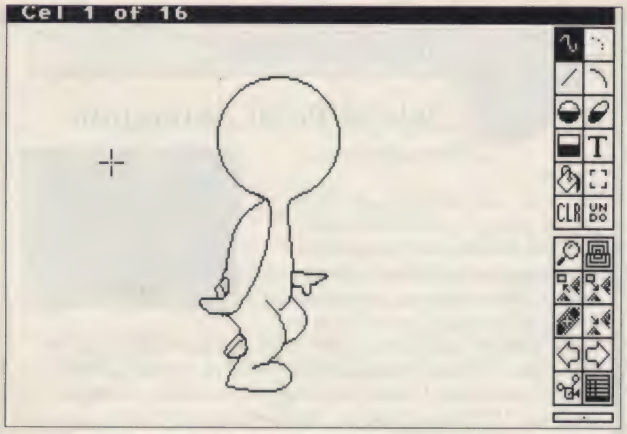
This is the only real contender to the Disney package, but there are still substantial differences. Deluxe Paint Animation is essentially an extension of Deluxe Paint II Enhanced, but it includes additional animation commands as well as the powerful paint features. While this software can be used for full screen animation it is geared more towards animating smaller objects like sprites. Another advantage of this software is that it generates LBM format pictures. This format is well documented, so it is easy to use the generated artwork in your own programs.

Before any colour can be added the animation must be cleaned up and any defects corrected.

Now you can use the fill tools to colour each cel, with either a real colour from the palette, or a dithered colour.

Before loading the background it is necessary to indicate which colours you have used on the frisket.

Finally, this background can be imported into the relevant cels, and now your animation is complete.

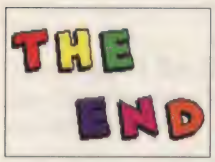


There are plenty of example Pencil Tests included, which can be viewed and modified

Disney evidently doesn't intend Disney Animation Studio to be used to produce intro animation or other animation intended to be run from within other programs, since no information is given about the format of the files created by the package. This is a shame as it severely limits the use of The Disney Animation Studio as a serious development tool.

The sort of person who is going to get the most out of this software is the student of animation. It provides a perfect platform for experimenting with cel animation without having to spend a lot of money on specialised equipment.

Before you rush out and buy it though, take note that you will need a pretty powerful set up to take advantage of all the features. The final version of the simple 20 second animation that I produced took up 146K. If you start producing substantial animation you're going to need a good couple of megabytes of RAM, not to mention plenty of hard disk space or high density floppy disks.



Transferral to video

The ideal set-up, if you're serious about producing lengthy animation, would be to create short sequences using The Animation Studio, and then transfer them to video tape. This way you can also dub on extra sound or music at a later stage, or even use more sophisticated effects avaialble with video, like overlaying the animation over live action. To really exploit the package to the full, you will require a compatible sound board, and a fully-featured paint package like Deluxe Paint II Enhanced. That's a minimum total outlay of £240, and that doesn't include any additional video equipment you might want to use. Add serious video equipment and the price becomes astronomical. It's a lot of money for the casual user to pay, and, as I mentioned before, developers of other products probably won't find The Animation Studio that useful. If you are planning on looking for a job as an animator however, and need to produce impressive showreels, it's a worthwhile investment. For the sheer power that features like the Onion Skin and Camera give you, the little quirks can be forgiven.

LAURENCE SCOTFORD

The Art Of Animation

A nice addition to The Disney Studio is a morgue disk containing digitised extracts of some original Pencil Tests from Disney productions. Unfortunately these can't be modified, but they can be studied in detail and will provide useful reference points for student animators.

Biped Walk

Mickey Mouse himself provides this example of one of the basic tools in the animator's repertoire.

Biped Run

Things get a little more complex with running, as demonstrated by Alice.

Quadruped Walk

When, like Pluto, you've got four legs rather than two, it's important to get the sequence right.

Quadruped Run

This sequence from Lady and the Tramp shows how to get the illusion of speed.

Path of Action

The illusion of speed is also achieved with motion blur, as demonstrated by Goofy.

Arcs

The way that most living things move is in a series of arcs, as can be seen from this animation of the Fairy Godmother from Cinderella.

Squash and Stretch

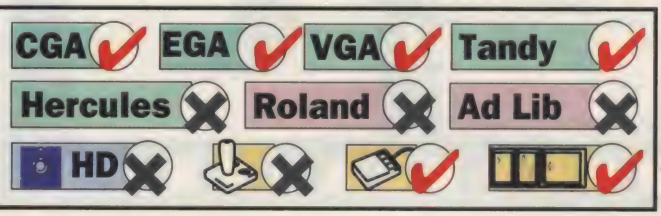
Exaggerating movements, like those of Tweedledum and Tweedledee, gives an illusion of weight and substance.

REQUIREMENTS

You'll need 640K of base RAM, and at least 2Mb of Expanded Memory if you are planning to do anything complex. The Disney Animation Studio is supplied on four low density 3 1/2" disks or two high density 5 1/4" disks. You can install it to either floppy disks or a hard disk, and you don't have to install the supplemental files if you don't wish to.

TECH SPEC

The mouse is required, and a Sound Blaster, Disney Sound Source, or Tandy Sound if you want sound effects.



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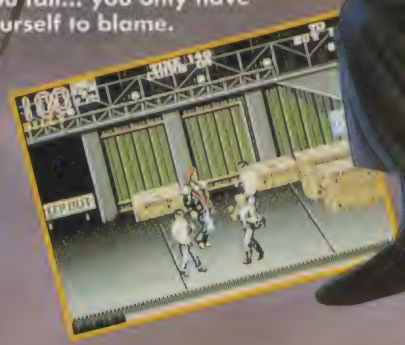

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■ Heimdall ■ Core Design ■ £34.99 ■ (0332) 297797

It is prophesied that a mere man will be born ready to defeat a god. Core Design is here with its version of the story

Hei

The tales of Norse mythology easily rival anything the Greeks could come up with in terms of ingenuity and originality. For the most part, Norse mythology was a way of explaining strange events, such as the weather or the creatures which were supposed to inhabit the distant reaches of the supposedly flat world. Heimdall draws its inspiration from such tales, whilst also taking the chance of attempting to bridge the gap between RPG playability and the style of graphics normally associated with the virtually unplayable Readysoft games. A lot has been made of this supposedly impossible marriage of styles, but this seems to a wedding destined to last a lifetime.

This PC version has sprung from Core's Dave Pritchard who has taken programmer Ged Keaveney's original Amiga code and transferred it lock, stock and barrel, whilst Jerr O'Carroll has recreated his original graphics himself, with able assistance from righthand man, Mark Price. The result is a perfect conversion of the Amiga game, which may not sound particularly impressive to 386 owners, but when you consider that the Amiga game pushed Commodore's machine well past any previous limitations, it doesn't sound so bad after all.

Loki dokey ...

Heimdall preludes the events leading up to the legend of the Battle Of Ragnarok. Ragnarok was the final apocalyptic battle between the Norse gods which, coincidentally, came at a time when the Vikings were losing faith in their gods and the Norse warriors themselves were in retreat. Four of the mythology's gods play a major part in Heimdall, but the main bulk of the game involves the evil Loki – a renegade deity whose powers were used to destroy the other gods. In legend, Loki was a warring god of chaos, whose only reason for existence was to destroy. During his existence, he created the vicious world snake (a massive reptile which ate travellers and was eventually destroyed by Thor – the initial spark which was to ignite the battle, in fact) and was the father to Hel – the mistress of the dead. It is natural then, that in Heimdall he is the reason for your quest.

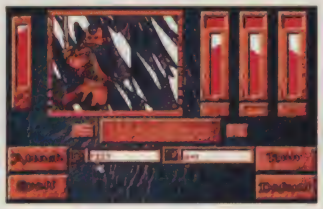
In an attempt to throw the battle in his favour, Loki has stolen the weapons of his three most powerful enemies. By taking Thor's hammer, Odin's sword, and Frey's spear, and throwing them down to Earth, he has rendered the mighty trio virtually weaponless, as it is a written rule that the gods cannot walk amongst mortal man for fear of interference in their evolution. Only one plan of action can be taken in the side of

Let the battle commence

As in most role-playing style games, combat plays an integral part in the proceedings. As progress is made towards the game's conclusion, the initial warriors and demons give way to Loki's world snake and Tolkien-inspired spiders. If you're lucky, confrontations can be avoided by skirting around the static sprites which represent your enemy in the 3D section. However, should you decide to engage them - or vice versa - the screen switches to that of a first-person perspective view of your opponent. Surrounding the animated representation of your foe are a series of icons, and it is via these that the fight is controlled.

One of the more unusual features of Heimdall's battle scenes is that they are played in real-time. Rather than using the conventional system of 'you hit me, and I'll hit you' where players take turn to inflict damage, as soon as one of Heimdall's opponents appears on screen, he's ready to cleave your head from your shoulders. Luckily, though, the aforementioned icon system makes the system more user-friendly than it may sound. Basically, the icon panel lists your three party members, displays their health panels and also shows a list of currently-held weapons. By selecting the required weapon - whether it is a longsword, axe, or just a fist - it can then be used simply by clicking on the attack icon. Your chosen weapon will then appear on the battle screen as you lunge at your opponent and, hopefully, strike home. With every successful hit, your opponent is knocked back, allowing a succession of hits. However, they are not beyond retaliating, and certain species of nasty are seemingly impervious to your attacks - unless their weak spot can be found, that is.

Another advantage of the battle system is that it is realistic, too. It's no good attacking your foe whilst his guard is up as he'll simply block your move, but if he is in mid-swing, then he is relatively unguarded and vulnerable. Consequently, hit him whilst in such a position, and more of his energy will be reduced than normal. Once the creature of demon has been defeated, you can then rifle through its pockets for even more useful spells and goodies, ready for your next encounter.



The creatures Heimdall and his party encounter vary greatly, but all are battled in the same way. The fight sequences are played in real-time, and are icon-controlled.

Simply by selecting your weapon and using it, the action will be effected. It's a simple, but very realistic system which works well.

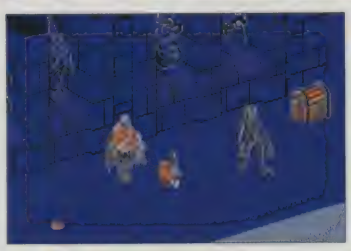
mdall

The stunning intro details the events surrounding Heimdall's birth. As an all-powerful God sits playing with the Earth, he spots Loki's intervention and fires a lightning bolt at a young virgin. Within seconds, Heimdall is born and the legend begins ...

good's favour, and Thor uses his magic lightning powers to impregnate a young virgin with a son who will eventually grow up to fulfil an ancient prophecy of a man defeating a God.

Heimdall begins his massive quest by proving his mettle to the local villagers during a recruiting drive. If our blonde-tressed hero is to amass a decent crew for his epic voyage, he must win their confidence by proving his deftness in the areas of balance, agility, swordplay, and strength. Three tests have been set for our hero to prove his worth in, and the first is set within a crowded tavern. As a series of suitably drunken Vikings lurch about in the background, Heimdall must ignore their cheers and concentrate on the popular Viking sport of axe-throwing. This is probably Heimdall's most infamous scene, and shows a pigtailed girl tethered to a set of stocks by her long, blonde hair. Using the mouse to position a deliberately jittery cursor, the player is given 10 axes with which to sever her eight pigtails, and pinpoint accuracy is needed if all eight are to be severed. In addition, if an axe sails too close to

Your party members have their individual inventories, from which objects can be selected, given, or used. In addition, anything that is found along the way is also automatically added. However, goodies like food and some of the weaker weapons are best given to non-travelling crew members.



the poor female, she rapidly withdraws her head, revealing that the pigtails are actually taped to her head!

Hands still shaking from his recent ordeal, Heimdall is then thrown into a pigpen, within which a greased Boar sprints from end to end. To prove his agility and speed, Heimdall must chase the errant pig and leap on its back to immobilise it. However, a fast-moving axe at the bottom of the screen acts as a time-limit and on reaching the far right of the screen the failed pursuer is disqualified. Finally, we board a ship to prove Heimdall's prowess with a sword. Played over a two-screen-wide longboat, the player must use a quirky 'rotate and move' system to guide Heimdall across the boat. To the far left of the boat awaits a stash of gold coins, but between our hero and these are three massive warriors who are reluctant to let it go. However, by moving the would-be hero across their paths and hammering fire to use your sword, they are temporarily disposed of, allowing you a crack at the reward. Once it is in your possession, it's time to pick your crew.

Your would-be companions are a motley crew of blacksmiths, wizards, warriors and other sundry professions, and each varies in their capabilities. For instance, whilst a wizard will be particularly adept when waving a wand or preparing a spell, don't expect him to lead your hordes into battle! However, one nice touch is that your party can improve their weak areas with the use of runestones, and when found and given to a particular character, they will boost their prowess slightly. However, with your six crewmembers (hopefully chosen as a good cross-section of warriors and alchemists) safely onboard, your magical adventure across the game's 30 islands begins.

Travelogue

As in all the best Jules Verne TV adaptations, your impending mission is plotted across a crumpled and faded map, upon which are marked the aforementioned islands. However, rather than tackle all 30 at once, each of the god's weapons his hidden in its own archipelago of 10 islands, and these must be tackled in a certain order. This isn't as limited as it may sound, though. The reason that you can't whizz across to the far side of the land is simply one of provisions. Your craft can only hold sufficient stocks for two nights and two days, and consequently, this renders those long journeys impossible. However, by stopping off on-route and scouring the islands for goodies, further exploration without actually attempting to solve the game is possible. On setting sail, though, it takes mere seconds of accessing before the adventure itself starts to unfold ...

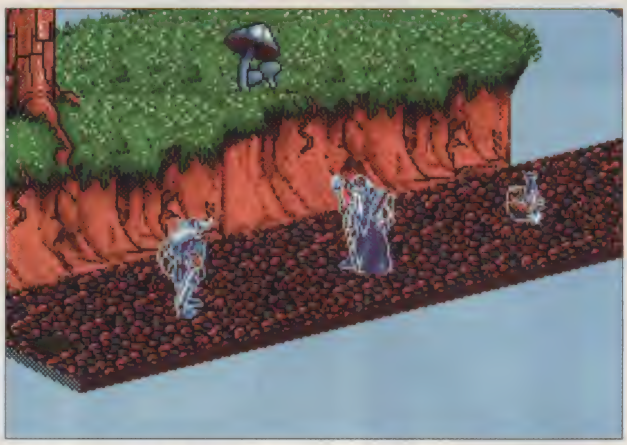
It has to be said, that Heimdall is quite simply one of the most impressive isometric arcade/adventures I have seen. I have always been a real fan of this sub-genre, but not since John Ritman and Bernie Drummond's Batman and Head Over Heels games has another knocked my socks off like Heimdall. As soon as your three boarding party members leave the ship, they enter a world of stunning and detailed backdrops, which feature flickering torches, devious traps, and a full complement of interactive nasties and aides. Initially, the player is given control over the titular hero, but using the three numeric keys, your two compatriots can be selected at any time. A joystick or

Gods Almighty

Norse mythology is littered with unusual heroes and characters, and Heimdall makes full use of them. Here's a guide to Who's Who In Heimdall:

Thor – Easily the most respected of the gods. Master of the sky and storms, Thor was also the overseer of the law and justice. An absolute colossus of a man, he was famed for his warlike manner and, consequently, was the most favoured of the Viking gods. Stories of Thor told of his climactic battles against all odds, where his power won him through. However, it was such a battle that spawned the eventual happenings at Ragnarok. Whilst out on a fishing trip, Thor was attacked by Loki's pet serpent, the world snake. As the eel-like creature writhed around his stricken boat, Thor killed the creature sending Loki into a massive rage - whereupon he vented his rage by killing Odin.

Odin – Compared to the barbaric Thor, Odin was a far deeper character. His personality was made up of the best traits of warriors, seers and poets, and this made him a considerate but strong man who was respected by all.



Along the way, you will encounter people who ask specific favours of you. Never dismiss their advances, as following their requests nearly always grants you with a further clue to each of the weapons' whereabouts.

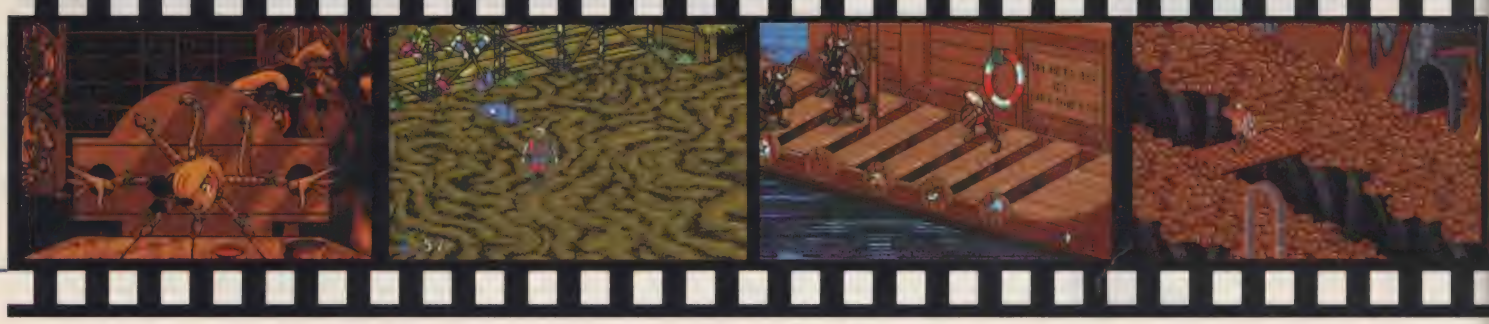
TWO MINUTES IN THE LIFE OF YOUNG HEIMDALL

Heimdall must lob axes in an attempt to sever the girl's pigtails. Ten axes are at your disposal, but a jumpy cursor makes things harder.

It's pig-chasing time, next. A greased boar must be leapt upon before the timer expires in a show of speed and agility. Not for the squeamish.

... Finally, we move to the longboat section. A series of hefty Vikings must be fought before all that gold can be claimed.

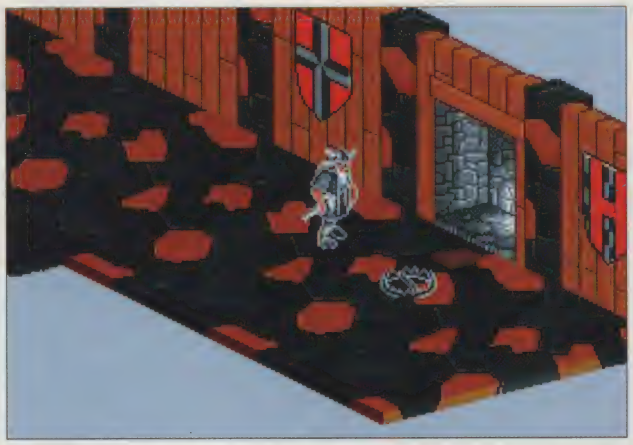
The adventure itself is set across ten islands, but a 'Save' option and lots of luck should see you through to the brilliant end sequence ...



However, whereas Thor was held in awe and kept his distance from mortals, Odin was prone to giving mankind the odd push in the right direction. However, such intervention gave man weapons too early and they promptly turned against each other in a massive, bloody battle. Armed with his spear, Odin was consequently banished from the realm of the gods and was sent to Valhalla - the Norse equivalent to Hell where he was duly given the title of 'God Of Death.'

Frey – The God Of Fertility. Frey was used by the Vikings to explain the seasons and the success of their crops – if a crop was good, Frey was pleased. Frey isn't as well documented as Thor or Odin, but he is one of the few gods to have fallen in love. He fell for a female giant called Gerd, who he promptly shacked up with in her underworld kingdom, returning only for the final battle.

Loki – The main instigator of Heimdall's problems, and the Battle of Ragnarok. He took his revenge on Thor's killing of his world snake by killing Odin. Thor and co. then swept upon him and bound him to a rock using Loki's children's entrails as their ropes. However, in the final battle Loki returned with Fenrir The Wolf and Hel – Mistress of the Dead. But none were to escape the battle.



Traps are verywhere, and take the form of gaping holes in the ground or booby-trapped chests. All the adventurers are limited in the number of hits they can sustain, but potions can be used to heal wounds.

the keys are used to move the figures through the isometric rooms, and the controls are kept to a bare minimum and involving either walking using the directional controls or pressing fire to open a chest. In addition, when the latter option is selected, the player is also given mouse control over the pointer, and this greatly speeds up the process of object selection and battle (more of that later).

Jerr and Ged's original intention was to set the game across the entire British Isles, but it was eventually decided that this would lead to too many areas where nothing seemed to happen. Thus, although the rooms on each of Heimdall's islands are far from expansive, they are all packed with collectable objects and foes just waiting for a rumble. The rooms either scroll to follow the adventurers' movements or are single-screen affairs, with all the exits immediately visible. In addition, also scattered throughout the islands are a series of chests which play a key part in the solution of the game's problems. Unfortunately, though, everything in Heimdall is best treated as an enemy, and even these seemingly-innocent chests can be armed with energy-sapping spikes which jut out as they are opened.

On approaching a chest, and indeed, any other objects within the game, the computer automatically asks whether you want to investigate. On answering in the affirmative, an inventory of its contents is listed and automatically added to the currently-controlled hero. The assorted goodies range from sundry objects, such as food, money and better weapons, to the aforementioned runestones and a wide variety of spells which can then be scattered between the more worthy party members. The distribution and usage of these collected objects are effected by pressing the space bar which then

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The many lands you explore are varied in their looks. Not only are there the obligatory villages to explore, but there are lands inhabited by giants and spider-infested catacombs - and the realism is added to as days turns to night.

reveals a pictorial view of your crew members and an 8-object list of what each is currently holding. In addition, listed vertically to the left of these are a series of executable commands, including 'cast spell', 'distribute' and 'use', and it is via these that full mastery over the objects is gained. Simply by highlighting the required object and clicking on the desired option, the spell or weapon is then released or brandished.

Spellbound

Although this system is very simple to operate, there is still a danger of using up your limited supply of spells too early. For the most part, the spells you'll find are used to detect the spike or floor-based booby traps or to locate hidden exits, but there are also resurrection and destruction spells which play an integral part in the game and, if wasted, you're basically up that familiar brown canal without a paddle. Perhaps if there had been a few more to help the unwary (or even careless) traveller then it would have been a little more forgiving and the adventure wouldn't strand the player so quickly - but this is a minor complaint in an otherwise excellent product.

Deadly pits and booby-trapped chests aside, the rest of the game is a matter of exploring the many rooms and making full use of any collected objects. True, this may not sound the most exhaustive of tasks, but the style with which Heimdall shows and does everything disguises the basic gameplay. Don't think that I'm knocking the simplicity, though. It's all very well having the most detailed control system which allows your characters to do everything from scratch a piece of moss from a wall to pat a passing dog, but if they're never actually used, what's the point?

Heimdall's action is simply a matter of utilising the said objects when you deem them necessary, but the simple puzzles ensure that there's nothing too mind-blowing. For instance, whilst passing through one of the earlier islands, my party stumbled across what appeared to be a monk. On moving towards the cowled figure, he revealed himself to be a magician who was desperately in need of some herbs for a spell he was concocting. Using this knowledge during further exploration of the next island, we duly located the necessary herbs, took them back and used the icon system to give them to him and – voilà! – he showed us his powers. In this case, he created a doorway to a previously inaccessible area, but other puzzle-related objects involve placing three objects on a mystical tree stump which rewarded the party with another, more relevant, object to the mission.

The nicest thing about Heimdall's puzzles is that they all tie in with the Norse theme and the overall search for the gods' weaponry. In addition, to ensure that the player's attention is kept, the islands vary immensely in both their content and their 'looks'. My particular favourite was the giant's world, which lies somewhere amidst the second mission. Not only is everything drawn on a greater scale, but the attention to detail even extends to examining massive books in search of clues to the spear's whereabouts. And in keeping with the scale of the gods in relation to the mortal Heimdall and his team, the weapons are enormous (so big, in fact, on locating Thor's Hammer, I completely missed it because it was made to look like part of the background!) and must be scaled down before they can be retrieved – a perfect example of one of the more essential spells.

This PC incarnation of Heimdall is every bit as good as its Amiga cousin, and also runs slightly faster. You're not just playing an adventure, you're experiencing a bridge between game genres, and the transition is a very easy one. Everything about the game is excellent, and even if you're not a fan of the arcade elements, most can be skipped or avoided in the game's conscious effort to be user-friendly. From the moment the intro starts to play to the battles against the world snake, I guarantee you'll be enthralled by Heimdall's bustling gameplay. Developers 8th Day may not be the new Lord British, but they've certainly got what it takes in the mass appeal stakes. Classic stuff.

PC review 8 RATED

STEVE MERRETT

ALTERNATIVELY...

D-Generation

Mindscape, £30.99

It's not really fair to compare Heimdall to RPGs as it is so obviously aimed at the novice adventurer. However, it's also true that the PC isn't exactly bubbling over with isometric games either, and the only one that really springs to mind is Mindscape's D-Generation. Granted, Mindscape's game is more limited and 'arcadey' in style, but both involve sufficient forward planning if the stages are to be completed.

Escape from Singe's Castle

Readysoft, £44.99

Graphically, Heimdall is a worthwhile rival to the Readysoft laser disk conversions, and Heimdall's many characters and monsters are far more impressive in their movements than Borf or Singe ever will be.

HARDWARE REQUIREMENTS

Heimdall comes on six 5.25" double-sided disks, but is a doddle to install on to your hard drive.

The switch between mouse and joystick during the inventory is simple to get used to.

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Suddenly, you hear diabolical laughter from the thicket of trees looming ahead of you. A band of thieves emerge, brandishing crudely spiked clubs. You raise your sword with the little strength you have left and call upon your patron saint to intercede. The earth swallows the bandits before your eyes!

You plod on through the forest, too weary to notice the silent eyes of the witches that watch you. In the distance you hear strains of music. Laughter. The clinking of glasses. Another adventure awaits. This time it could lead you to fame and fortune. But then again, it could just lead you into trouble.

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■ Steel Empire ■ Electronic Arts
■ £29.99 ■ 0753 549442

PC gaming has traditionally been a strategy dominated market, but recently action games have begun to emerge in greater quantities

Steel Empire

The plot to Steel Empire is like something out of a bad science-fiction novel. The planet Orion, like the continent Antarctica, has many valuable resources, and, just like Antarctica, every greedy megalomaniac within reach wants to start slicing it up.

You play one of these megalomaniacs and your task is to get to as much of Orion as you can before the opposition does and then proceed to use the resources available to you to wipe out your opponents and claim the planet for yourself.

This being the future and all, you're not about to perform this little trick with flesh and blood soldiers, but with Cyborgs. These bio-machines have all the advantages of human intellect and adaptability with the efficiency and sheer power of a machine.

One of the nicest aspects of Steel Empire is that there are three ways to play it. You can undertake a pure strategy game in which the combat is resolved by the computer and there are no action sequences whatsoever. You can practice the action sequences to your heart's content without actually playing through the strategy element. Finally you can combine the two in a grand mixture and get the best of both worlds.

Another strong point is the facility for up to five players to participate at once. These can be any combination of human or computer controlled players. Those under computer control can be set to one of six levels ranging from wimpy to nasty. This means that, even if you are playing alone, you can set yourself up against a range of opponents rather than four identical computer controlled clones.

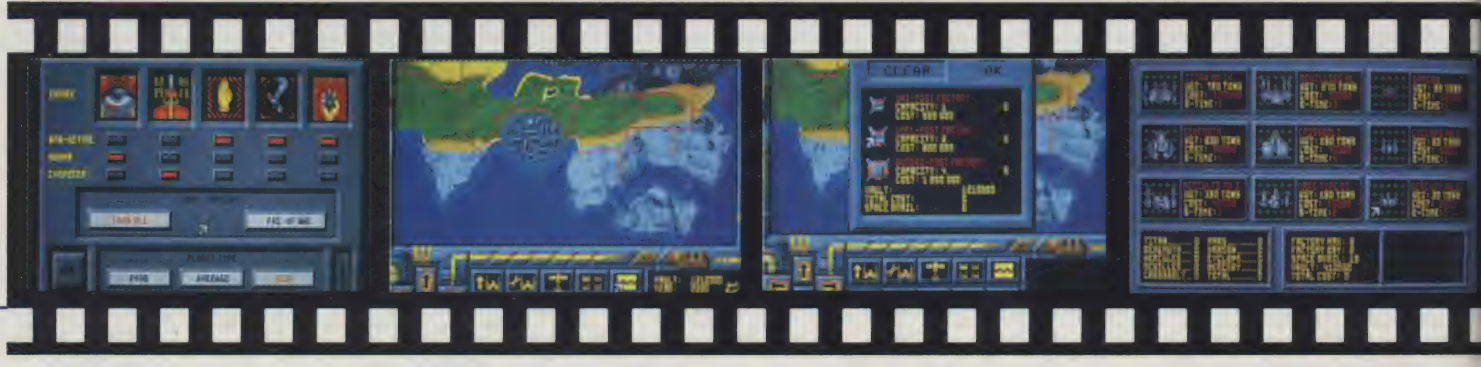
TWO MINUTES OF CYBORG MANUFACTURE

Start playing an easy game against one weak computer opponent, on a rich planet, and without the fog of war.

You begin with one territory and no buildings or cyborgs whatsoever. You'll need to get some defence for your empire very quickly.

The first thing you are going to need is plenty more cyborgs, so it's well worth spending some of your limited cash on a dualpost factory.

Now you can build some cyborgs. Begin with the cheapest, a couple of Mercuries, before you progress to larger cyborgs.



Combat is a fast and furious affair, in which the cyborgs throw everything they've got at each other. The way that the battle progresses will depend on the type of terrain that the cyborgs are fighting on. In the Arctic zones (left), the landscape is fairly open with very little cover, but in the city (right) the cyborgs often have to blast their way through buildings before they can make any real progress, so watching ammunition levels become critically important.

The difficulty level can be further controlled by two other factors. The default map setting, Show All, enables you to see all the enemy forces, all of the time, making it simple to adjust your tactics to meet any impending threats or to take advantage of opponents in weak situations. If you want to add a bit of spice to the game however, you can select 'fog of war'. This will prevent you from seeing where non-friendly units are placed except when they are in a territory neighbouring one of yours.

The final factor that will affect the difficulty of the game is the state of the planet. The default selection is a planet that has an average number of resources available for exploitation, but you can also elect to play on a planet rich in resources for an easier game, or poor in resources to increase the difficulty.

Money makes the world go round

Play proceeds in a series of turns. During each turn a player may perform as many actions as his financial resources allow. The basic principle is based on a simple equation: territory = resources = power = more territory, resources and power. In other words, the more land you have the more powerful you will become.

Having said that, there are really two ways you can play the game during the initial stages. The first, and more obvious of the two, is the expansionist policy; your aim is to acquire as much territory as you can in the shortest possible time. The advantage of this policy is that you very quickly get to exploit the resources of the land you conquer, and can use these to build bigger and better units. The disadvantage of this policy is that your forces will be spread thin and will be vulnerable to attack.

An alternative is the defensive policy; you sit tight and use all your resources to build strong defences and a good defensive force in just two or three territories. In this case the advantage is that you build yourself a near impenetrable centre to your little empire and by the time that your opponents build a force worthy of attacking you, they'll have a difficult time wiping you out. The disadvantage is that the small number of territories you control will yield a very low income and consequently you'll be harder pushed to maintain a sizeable force.

Once you have control of a territory (which essentially involves having one or more of your cyborgs occupying it and building a capital), you can then construct useful buildings, namely factories and fortifications. Factories make one thing only, cyborgs. Each factory has either one, two or four bays in which cyborgs can be made, but the largest factory is prohibitively expensive so it probably won't be viable until your campaign is in full swing.

There are nine different classes of cyborgs available ranging from small and fleet but poorly armed and armoured models to the large, heavy and slow, walking fortresses. See the panel for more details on these.

Before charging off to conquer more territory it's worth spying on the prospective sites to see which will be the most worthwhile.

Try to get a city as early as possible as they yield the greatest resources, and you'll need as much credit as you can get in the later stages of the game.

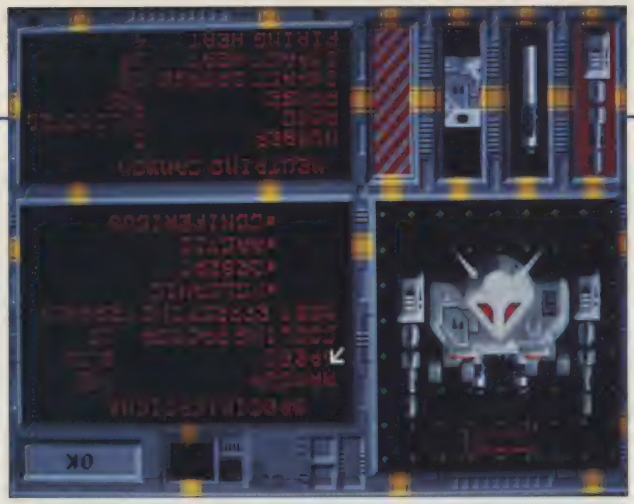
Once you have expanded a little bit and gained a larger income, it's well worth fortifying those territories that have factories – you don't want to lose them!

Don't forget to keep an eye on the enemy and watch for any impending attack or any opportunities presenting themselves.

Fortifications come in three types, light, medium and weak, and will help to repel invasion forces so that your cyborgs don't take the whole brunt of the battle. Fortifications are well worth investing in; heavy fortifications alone can destroy a small attacking force.

The downside of fortifications is that they take up space that could otherwise be used for factories, and since you have a limited amount of building space in each territory you must think carefully where you place them.

Building space and resources will depend on the type of terrain in a particular territory. City territories are rather unusual in that you can't actually do anything with them other than occupy them; factories and fortifications are out of the question. Cities are worth having though because they generate tremendous resources.



When you are shopping for cyborgs you can get a full specification for any of them by clicking on the picture of the cyborg on the selection page. This enables you to choose the right cyborg for your current situation.

Once more unto the breach, dear friends

Sooner or later you are going to encounter the enemy and at this point a glorious battle ensues. Actually it's not exactly a glorious affair, more of a tooth and claw scrap between frequently inadequate forces. If you have previously elected to play the strategy game, all the battles will be resolved by the computer based on the odds generated by the situation.

Even if you have elected to play the full campaign game you can still opt to have the computer resolve any battle rather than actually playing it in full. This is worth doing when battles are taking place regularly and the odds are heavily in your favour. If you do decide to control the battle directly you must first decide on the battle strategy that your cyborgs will follow. There are four different strategies available. Guerrilla attack is the simplest and basically boils down to 'if it moves shoot it, and if it doesn't move, shoot it anyway'. You can make the battle a little more directed by ordering your cyborgs to place the emphasis of their attack on other cyborgs, structures, or capital buildings. It is difficult to succeed with the latter action, but it does reap the greatest rewards because once the capital is destroyed all other structures, like fortifications and factories, cease to function.

You can further affect the general run of the battle by setting a target priority. This determines how easily or otherwise the cyborgs get side-tracked from their main mission.

REQUIREMENTS

You can run Steel Empire from the three floppy disks it is supplied on, or you can install it on your hard drive (losing minimal space). Make sure you have plenty of base memory available. Steel Empire won't run with TSRs present.

CYBORG CITY

There are nine different cyborgs to choose, each with its own characteristics

Mercury

A fast and manoeuvrable cyborg that is a useful advance force but has weak armour and is vulnerable to attack.

Cyclops

An equally fast cyborg that is slightly more expensive than the Mercury, but has better armour and arms.

Dragon

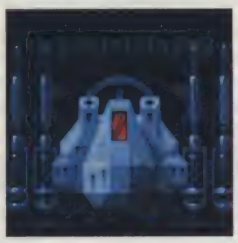
A highly manoeuvrable and fast cyborg that, while being poorly defended has awesome fire-power.

Mars

A medium weight cyborg which carries a deadly neutrino cannon making it an excellent manoeuvrable fighting machine.

Crossbolt

A slow cyborg which excels at long range battles but is handicapped when caught at short range



Achilles

The Achilles is a good short to medium range combat cyborg but suffers from lacking a long range weapon.

Hercules

A very good all-rounder with just one disability: it heats up very quickly and can easily overheat in battle.

Behemoth

A heavy weight cyborg at its best in short range or long range combat situations but at a disadvantage in mid-range encounters.

Titan

The ultimate cyborg. It has no known weaknesses and can only be defeated when heavily outnumbered.

ALTERNATIVELY...

Battle Isle

Ubi Soft, £29.99

This game, written by Blue Byte, the authors of Pro Tennis Tour is very similar to Steel Empire in many ways, but it is far superior in both gameplay and presentation. The plot involves defeating the enemy forces on a series of increasingly difficult islands, each divided into a hexagonal grid. Each player has one movement and one attack phase and the combat is shown graphically at the end of each turn. The game is strangely compelling and likely to provide longer lasting entertainment than Steel Empire.

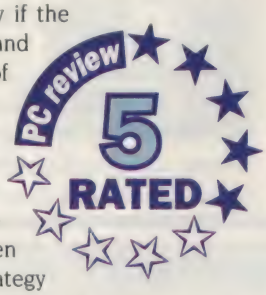
Battletech II

Activision, £35.99

If you like the idea of the action element in Steel Empire but are disappointed with what you get, then you might like to look at this interpretation of the FASA board game. You still need to apply a bit of strategic thinking, but there's plenty of action too.

If you are defending you also get to place your cyborgs. This allows you to surround important buildings like factories while giving less emphasis to other areas. Having set up your battle plans the battle can begin, with you in control of one of the cyborgs. Unfortunately not enough thought has been given to the way battles are played, and while you can gain a rough idea of what is going on from the radar screens, on the whole, battles are a confused mess.

Assuming that you make it through the battle with some cyborgs left you'll soon find out about another regular expense, namely, repair costs. You can always leave cyborgs unrepaired temporarily and save some cash that way, but it might prove to be a false economy if the same territory gets attacked again and is lost because of the bad state of your cyborgs.



While the idea of combining strategy and action game was a nice idea I couldn't help feeling that Steel Empire would have been a better game if the action aspect had been shelved and replaced with a strategy game within a strategy game. If the player was allowed to control each battle in detail on a turn basis, with each cyborg being given specific directives at the start of each turn then this might have been a superior game rather than the mediocre one it is.

There isn't anything fundamentally bad about Steel Empire, it just doesn't do anything that hasn't been done better before. If you really want a turn based strategy game with a future combat scenario you can do a lot better than this.

LAURENCE SCOTFORD

Joystick is highly recommended for action sequences.

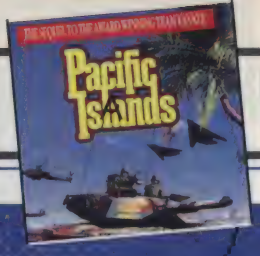
TECH SPEC

"Acclaimed as a revolution in game design, Revolution Softwares' goal is to change the conventions of role-playing games forever with..."

{GAMES X}

...Art is either a plagiarist or a revolutionist...

Gaugin



■ Pacific Islands ■ Empire
■ (0268) 541126 ■ £34.99

When a game based on a best-selling book is successful enough to warrant a sequel, it's usually a safe bet that said sequel will be based on the book's own follow-up. Not so for Empire and Pacific Islands. Instead of taking Harold Coyle's second tank-based novel, Sword Point, ODE (the developer of both games) has decided to take its tank game, Team Yankee, and expand on it, tweaking bits here and there and developing a completely new scenario for the action to take place in.

Instead of the fields of Germany and World War III, Pacific Islands is set on the Yama Yama atoll, recently overrun by North Korean-backed communist troops. Now an invasion of any kind is bad enough, but it's the fact that Yama Yama is a secret NATO communications base that has prompted a military response from the US. Diverting a seabound task force to the island, the US hands the mission over to Captain Sean Bannon (hero of Team Yankee) and his newly christened Team Pacific.

This is definitely computer game stuff and it's this lack of authenticity that gives Pacific Islands a less realistic feel than its predecessor. As opposed to the feeling of fighting a real army when playing Team Yankee, it just feels like you're fighting a computer here. Still, at least the computer puts up one hell of a challenge.

Time wasting tactics

The big difference Pacific Islands has over Team Yankee is its lasting appeal. There are over 25 different battles to take part in (as opposed to five in Team Yankee), all stretched over a series of five islands. And don't be fooled into thinking that they start off easy and gradually get

PC review TWO MINUTES OF ISLAND HOPPING

The training scenario is a good way to get used to the game, but the real test comes in the first battle on the island of Aloha. The mission is to destroy the radar installation, the fuel dump and cause as much damage to the runway as possible.

My first step is to set the artillery for the mission. My plan of attack is going to involve moving a unit behind a smoke screen while high explosive rounds draw the enemy's in the other direction. I have to allow plenty of time for my units to get into place.

The mission begins and all four of my units are located at the top of the map, behind a village. The first step is to get them all into the forest to the south, under cover and out of sight. Intelligence reports show the position of some of the enemy.

Unit one takes up position facing southeast into the valley. Units two and three move further south to face east into the valley, ready to hit the enemy in the side. Unit four is at the south of the forest, ready to move.

Following hot on the heels of the highly successful Team Yankee, Empire takes its tank platoons for a trip overseas

Pacific Islands

harder, the first one is likely to keep you stumped for ages and the second is even worse. This challenge is magnified when you consider that the first time you complete mission one, your forces are likely to be in such a bad state, that you'll need to go back and rethink your strategy to come out in a better state for the next battle.

This level of difficulty is what really keeps you hooked and thankfully it doesn't prove irritating. What did get on my nerves though were the time limits enforced on each of the missions. I found these to be a little unfair, especially as they could have quite easily been left as an option for the more experienced player to use. All too often I had executed a perfect set of manoeuvres, gotten myself into a very advantageous position and was about to execute the killing blow only to have the battle end and HQ tell me that I've taken too long. Now I'm no military expert when it comes to strategies, but having thought

VEHICLES OF DESTRUCTION

There are eight types of tracked vehicles you'll encounter during your stay in the Pacific region. Four of these are pieces of American hardware, the other four are the enemy. To help you recognise the bad guys from the good guys in the heat of the battle, here's a quick Who's Who of the battlefield.

The good guys

The M-1 Abrams main battle tank

The M2 Bradley infantry fighting vehicle

The M-113 armoured personnel carrier

The M-901 improved tow vehicle (ITV)

The bad guys

The T-62 main battle tank

The T-72 main battle tank

The BMP-2 infantry fighting vehicle

The BTR-60 armoured personnel carrier

With the units in position, I wait for the smoke artillery to hit, allowing unit four to slip across the runway into the trees to the south. Once there, I set them up to face north into the valley, so that I can hit the enemy from all sides.

While I've been setting up, the high explosive rounds have been hitting further to the east, causing a distraction. As the enemy starts to pour back into the valley, I open fire from all sides. It's a short battle and thanks to the trees, I take very few casualties.

With the battle for the valley won and the area checked out for any remaining rogue troops, I can start to take care of the mission in hand. The helicopters on the runway are the first to go, and of course the buildings at either end.

The next step is to take out the radar installation. The only other task is to take out the fuel dump. Unit four can take care of this by heading into the trees on the south-east side of the runway and carefully approaching the area. There may still be tanks in hiding.

through an entire plan, made all the necessary artillery arrangements and received a massive feeling of pride as my plans worked perfectly, then to have it all whisked away in the twinkling of an eye, really (and I mean really) annoyed me.

The other main area of the game that put me off (at first) is the split screen control method, which, while certainly innovative, is not without its apparent flaws. For a start, the graphics become too small to identify properly and I found myself constantly switching between the split and the full screen view to identify the good guys from the bad guys and the like. Initially it was a lot easier to keep switching between the units in full screen mode than it was to keep track of all four at the same time. Once I was used to the concept of controlling four units with this method, I plucked up enough courage to try using the split screen and found that after a while I was actually getting used to it and started to use it effectively in my campaign.

The split screen system is the cornerstone for the whole game (as it was for Team Yankee), but it's nice to see that as a system, it doesn't become the focal point, allowing you to concentrate on the business at hand, instead of marvelling at how the game works. Too many games these days seem to say "Look at the way you can do this and this and this", without remembering to apply the system to a worthwhile and enjoyable game.

Military red tape

Pacific Islands has a nice way of getting you used to this system and the controls, without jeopardising the outcome of the overall mission. The tutorial battle (supposedly a training exercise on a nearby island) takes you through the different areas of the game, one step at a time. Using the manual in conjunction with the on-screen action, it takes you round a circular course, identifying objects and vehicles along the way, gradually easing you into the controls. Those of you that remember Team Yankee will be more than familiar with it already, being more or less the same mission from there, with updated graphics and controls. There's no need to feel ripped off though, as those of you familiar with Team Yankee will probably be familiar enough with the controls not to need this section anyway.

Once through with the training, it's on to the main event. Before you get to the action there are a number of preliminary screens to go through. The first is the battle selection screen, showing a map of the current island and the areas of incident. Red squares are enemy occupied, while blue and yellow are yours. Even here you're planning your strategy as it's up to you to decide which areas to tackle next and depending on which way you go, you'll start in different positions. In essence it's little more than a 'level select' screen, but it does lend weight to the idea that you are in total control of the whole campaign.

As does the next screen, the vehicle and ammunition purchasing screen. You're given full control over financing and to be honest, it can be a real burden at times. You're given the option of using a default team and you'd be well advised to take it if you want to come in with enough money to support the whole campaign. That said, there was one time when I decided to buy nothing but M1 tanks for all four units, equipping them with an even spread of ammo and managing to come through the first battle unscathed and almost get through to the end of the second. With a better strategy, I can't help but wonder how far I would have got and whether this

As a signal for your troops to move in, a pair of low-level stealth bombers do the business in the short but sweet intro sequence

Each island is split into 'battle areas', indicated by red squares. Yellow squares indicate successful battles and allow free movement for your troops.

At the very heart of Pacific Islands is the four-way control system. Being able to view and control each of your four units at the same time can become crucial to a successful battle.

REQUIREMENTS

Pacific Islands comes on two 3.5" disks and one high density 5.25" disk and when installed will take up about 1Mb on your hard drive. DOS and memory requirements are equally minute, needing DOS 2.0 or greater and only 550k to run.

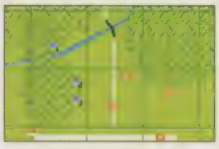
TECH SPEC

Both VGA and EGA are adequate, but CGA is rotten. Sounds are fine through the speaker.

CGA ✓ EGA ✓ VGA ✓ Tandy ✓
Hercules ✗ Roland ✗ Ad Lib ✓
HD ✗ ✓ ✓ ✓

would have been a realistic use of my forces. For those of you not so quick to open the purse–strings, you could always try inflicting the maximum amount of damage to enemy forces as more bad guys killed equals more money in the pocket.

Having taken care of the financial matters, the final step between you and the battlefield is the briefing screen. Displaying a map of the area showing intelligence gathered on the enemy's positions, you are given a list of your objectives, information on certain areas of the map and a chance to set up your artillery barrages. These can play a very important role in each battle, allowing you to set up smoke screens to move behind, to draw attention away from your tanks or to hammer a known enemy stronghold, weakening it for when you arrive. Artillery is a very nice factor of Pacific Islands and even though it's usually a little late to arrive on the scene, it can often turn the tide of the battle.



The best laid plans ...

With the paperwork finally out of the way it's on to the action. You usually start in a relatively safe position, with limited knowledge of enemy positions. But as a great man once said (I think it was someone on Terrahawks), "always expect the unexpected". So many things can go wrong in the heat of battle, that you'll often find that you're constantly revising and updating your plans en route, as it were. This is what makes Pacific Islands so challenging, no two games are ever the same. Don't think you can play one mission, make a lot of silly moves and see what routes the enemy take, then apply this knowledge to a second game. The computer fights a mean battle and is constantly changing his moves in a response to your own offensives.

One factor that really adds another dimension to a scenario is fighting at night. Without your infra-red goggles, all you can see is darkness. While this might be a mite unrealistic, it does make things incredibly difficult as one green blob looks pretty much like any other green blob. Constant referrals to the map to check out enemy positions becomes a must if you want to avoid shooting at your own troops. Thankfully, most of the enemy aren't blessed with infra–red goggles so at least technology's on your side. Obviously, ambushes are best planned for the night.

Just like Team Yankee, Pacific Islands' icons, control method and general gameplay take some getting used to, but the fact that after a few sessions even complete novices to the world of war games can be developing winning (but costly) strategies, is some indication of how gripping it is. Although there are still some areas for improvement and expansion (and let's hope ODE does decide to produce a third), Pacific Islands is immensely rewarding.

I also hope that ODE does decide to update this system to allow for other vehicles, as had Pacific Islands allowed you to use air and naval forces, not only would it have been a completely different game, it would have been a much better one. As it stands, it's likely to keep avid war gamers and mere amateurs hooked to their final battle (whichever of the missions that turns out to be). Let's face it, any game that can enthral me enough to make me lose complete track of time and miss my lunch hour has to have something in its favour.

PAUL PRESLEY

ALTERNATIVELY...

Team Yankee

Empire £34.99

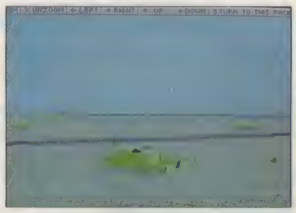
Team Yankee, Pacific Islands' forerunner, has one major advantage over this sequel, and one major disadvantage. The advantage is that it's based on the best-selling book of the same name, thereby giving a much firmer base, a stronger storyline and a more overall feeling of togetherness. Readers can relive the spine-tingling battles from the book and you really get a feeling of being there.

The disadvantage is also that it's based on the book, because you only actually get five battles to play (tackling each one five times on subsequently harder levels). Pacific Islands offers much more in the way of lasting appeal, giving it a most definite edge.

M1 Tank Platoon

MicroProse £40.86

As you'd expect, MicroProse's venture into the world of tracks and turrets (sounds like a role-playing game) is a huge three dimensional spectacular with all the trimmings. Doorstop manual, reference sheets, in-box maps, MicroProse has given it the full works and as a game, it manages to live up to its manufactured reputation nicely.



Although the controls are a completely different kettle of fish, the basic principle is still the same. You control a unit of four tanks (as opposed to four units of four) and can take command of all of the crew's positions in each tank. It's a lot more realistic and, without taking anything away from Pacific Islands, a lot more fun.

Battle Isle

Ubisoft £29.99

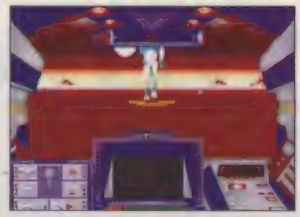
For a more strategic look at multi-unit controls, you can't go far wrong with Battle Isle. Although it's set in the near future, it still retains the use of army, navy and air force controls, allowing you to utilise any combination of tanks, amphibs, helicopters, jets, armed buggys etc. etc.

It's played using stricter war game rules than Pacific Islands, but is still more accessible than most 'pure' war games. Each side taking turns to deploy their forces, but has the added bonus of allowing two humans to fight against each other. It's quite an absorbing little number, much friendlier than most war games and is definitely worth a look if the first person perspective of Pacific Islands becomes too much.

Stellar 7

Dynamix £24.99 (£44.99 for CD–ROM version)

One of the best tank-based arcade games was Battlezone and one of the best Battlezone-based computer games is Stellar 7. Forget strategy, Stellar 7 is an out and out 'shoot everything that moves' game, with gorgeous 256 colour graphics and silky smooth 3D.



As usual with Dynamix, high-end PC owners (those of you with sound cards coming out of your ears and processor speeds faster than the combined wit of the cast of Whose Line Is It Anyway) are in for the biggest treat. The intro uses speech, the game features over 14 different musical scores and the whole thing is a perfect break for tank commanders that want to leave their brains in neutral for a while and just get on with the serious business of killing on a mass scale.

■ Magic Candle 2 ■ Mindcraft /Electronic Arts ■ £34.99
■ 0753 549442

Magic C

Bored by RPGs which appear to differ in name only? Mindcraft may have the solution

How does the saying go? Never judge a book by its cover? Such a saying could easily be applied to Mindcraft's latest role-player, Magic Candle 2. Do we have a motion picture quality introduction with digitised voices and cell animation? No. The intro, while concise and informative, is bland and not very long at all.

The game graphics themselves, surely they are of superlative quality with complex, multi-part animation of characters and the rest? Well, again, not really. The graphics are 256-colour VGA and pretty detailed, sure. But they will hardly take your breath away.

The animation is there, yes, but it's not exactly complex. Flickering lights and waterfalls, for example, appear to be the most popular spot animation in this game. As for the party characters, they don't move an inch of their own volition. The game supports all the popular soundboards and generally it is good, excellent in places, but not a major feature of the game.

The above shortlist of features, which Magic Candle 2 performs satisfactorily enough, are the highlights of the majority of the most recent RPGs. However, Magic Candle does not end there: it has rather more in the way of design, plot, structure, and, above all, innovation.

My hero

Magic Candle 2 is the second in a series of games set in a medieval game world, Deruvia, not too dissimilar in style from the likes of Ultima, Wizardry and so on. The first episode of Magic Candle saw the release of the evil Berbezza, from the wax prison that was the magic candle after the four and forty guardians of the candle had been reported missing. Then the game followed Berbezza's re-capture and re-imprisonment.

Now in Magic Candle 2: The Four and the Forty you must find out where on earth or, rather, where on Deruvia, the guardians disappeared to. The answer to this question forms the perfect revenge, a sickly poetic justice. You see, the guardians have themselves been imprisoned within the flames of candles, black candles of evil.

Arriving on three 3.5" disks, MC2 (which is unprotected) installs using a friendly program that enables you to toggle between the different screen resolutions, control medium and printer on/off (see later). All of the popular sound cards are supported and as several packages are now doing, you have the option of allocating a Roland LAPC-I to music and the Sound Blaster to the sampled sound effects. This dual setup requires a mixer (a basic mixer can be bought quite cheaply from Tandy, incidentally).

MC2 hits one of its few black marks right after the game loads up. Although the mouse is mentioned in the installation file the game does not support it. It appears that, with the rush to get the game on the streets, the mouse drivers have been omitted. I hear from American sources that a mouse-ready version is on the way from Mindcraft, so watch this space regarding mouse-driver updates from Electronic Arts. The alternative keyboard interface is adequate enough, however, to cause little aggravation while accessing the game's nested command menus.

From that sorry start the game itself puts a smile back on your face. Your character from MC1 can be ported to MC2 with no problem. However, if you wish, you can create a new character for MC2. The setting up of characters and party members (because, in this game, you control a party of characters) is rather different from the norm. Mindcraft does not allow you to roll your own characters.

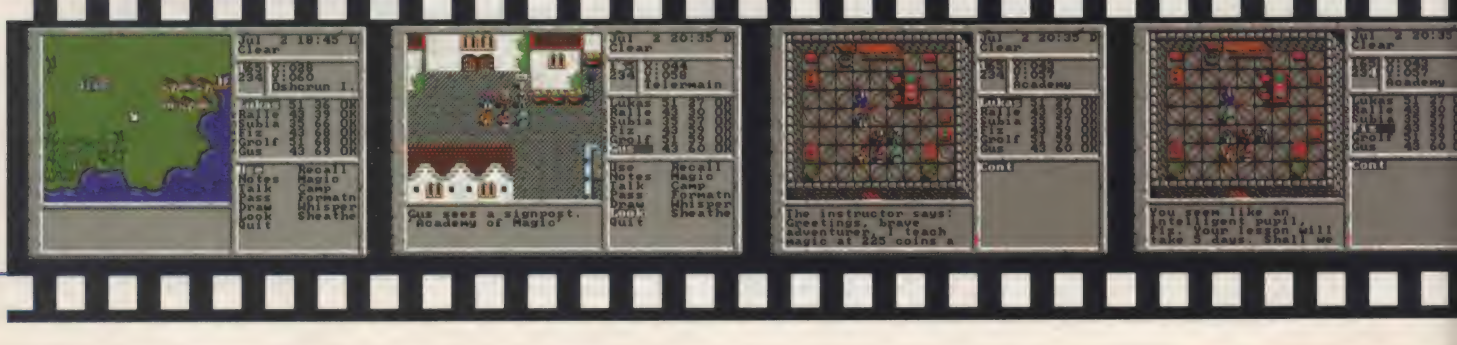
TWO MINUTES OF SPLITTING UP

Splitting the party into portions is one of the game's principal features. In this case we are going to improve the mind of our magician — Fiz. Firstly, however, we must find a magic academy in this town.

Once inside the town the scale changes to the larger 'town-scale'. Houses, taverns, ports and so on can be accessed in this scale — as well as asking for some help. Here we are outside the academy.

Once inside the academy the party's mode of movement changes. One character is chosen to move around and talk to people, buy things, etc. I've chosen my hero-type chappie to chat to the instructor.

Having pushed the reluctan Fiz to the front of the bunch and greeted the Instructor we have ascertained that th cost of Fiz's tuition and the length of time it will take to teach him.



andle 2

All of the individual towns have their own character, such as this cute village.

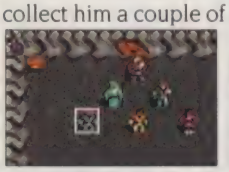
Rather, as for your initial hero/heroine (you can be male or female) you are given a choice of five complete characters who each have their own special pros and cons and specialities. Party members are treated in a similar way to your own character. No party member is 'created'. They are, instead, recruited, from all around the lands of Deruvia, whether that be in the King's Castle, in a bar or on your travels. Far more realistic than the normal 'rolling dice' method.

How many party members do you normally see in a RPG? Three? Six? MC2 allows you to use 31. This is the number of characters you will find on your travels who will be willing to join up — and you can take them all. Some will join for particular reasons (perhaps involving personal quests or grievances), others may only be in it for the money, while others may be loyal to you as friends.

Of course, you cannot roam the lands with a small army of around 30 characters. The answer lies in the ability to split up your party into small groups or single characters. This option was first introduced in MC1, but MC2 has refined and improved the feature. Previously, the MC1 split party option had the party roaming the land with a weakened party (ie, less than a full complement of characters) until the missing characters were able to rejoin. Now you are able to travel with a full roster while asking other characters to join up later, maybe in a different location.

The splitting up of the party leads me to another associated innovation which can be expressed in a number of ways but comes under the general heading of the Assign command. Basically, party characters can be instructed to "Wait here. We'll be back", "Go there. We'll meet you" and "Do this. It's important".

For example, imagine that you have a few messages to run before undertaking an important sub-quest. Also, let us say that one of your party is a little bereft in a particular weapon skill. Well, for a fee he can upgrade his skill. But, as in real life, this takes time. So, you can leave your man behind to train and collect him a couple of days later.



Manipulating skills

You can also use the character splitting exercise to earn cash. Each party member has a number of special skills. Unlike other RPGs in which skills are largely redundant you can actually benefit from, say, your elven archer who just happens to be a nifty gemcutter. Just ask one of the businesses in one of the towns if he'll take on the elven archer for a time. If he will, you can wander off, topping up your party to full strength by asking another chap to join your party. In the meantime the elven archer is earning gold coins for you as a gemcutter!

The Assign command gives the whole game a busy feel with added depth and extra possibilities. Long range contact is possible through items called mindstones, sort of mediaeval two-way radios. These are essential because each character has a mind of its own. That is, just because they are in your party it doesn't mean to say that that's where they will remain throughout the game.

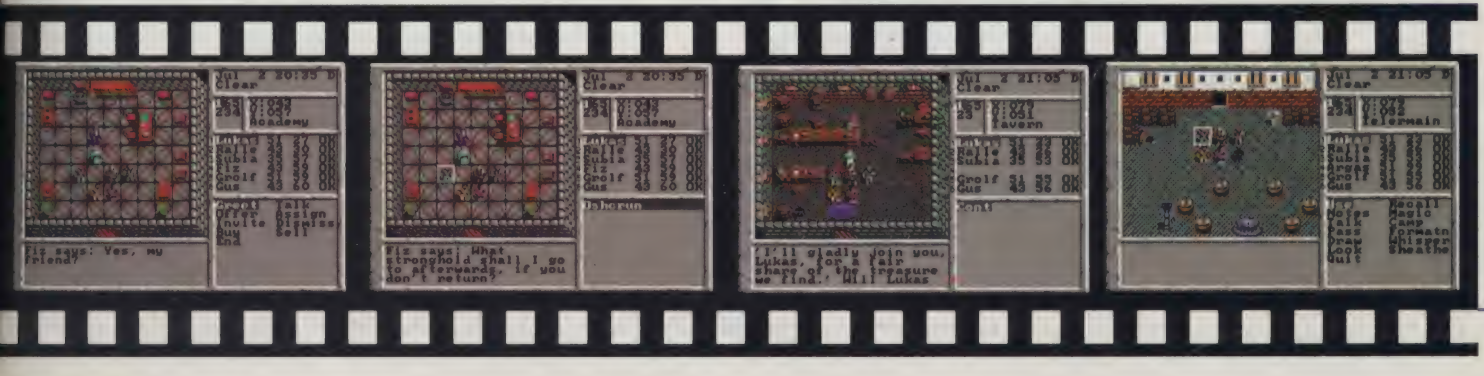
Loyalty plays a big part here. A metalsmith, earning you cash in a town, might just get bored with his lot (and who can blame him?) and wander off if you're not too careful. Mindstones are also handy if one of your roster is captured and dragged off to a hidden prison camp. Using the mindstone to locate him you can then initiate a rescue operation.

Now it's time to break the news to the old fellow — that, yes, you may be 157 years old but you're going back to school and you're staying here for five days. The Assign command will instruct Fiz to stay put.

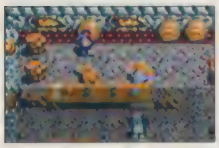
Having asked dear old Fiz to stay and study Fiz wants to know where we should meet him if we run into a spot of trouble and don't come back after the fifth day. Oshcrun seems like a likely place to meet up.

Right that's got rid of him! However, if we get into a scrape we may regret being one person short. A good place to recruit people is in a tavern, believe it or not! Adventurers appear to like a tipple.

... and lo and behold haven't we found someone? This chap is only in this game for the treasure — has he no scruples? He'll take about a quarter of everything you find. Maybe this wasn't such a good idea.



Within the village is a guest house which offers comfortable shelter for a price.



In the fight

Loyalty is also important in combat. Characters low in loyalty may run away (in classic Monty Python fashion). It is the combat that sees some of the best sound effects from the Sound Blaster. Wizardly fireballs sound like a howitzer has just been fired whilst a hit is just as impressive. Grunts are heard through swordplay and the swish of the blade from a missed lunge. Even after combat, if you have the chance to open a treasure chest using a lockpick (you will need the appropriate skill) and you trigger a trap (poison, for example) you hear the moan as the poison hits your character. Even if the lockpick fails and snaps you'll hear it snap in two.

One notable innovation in the combat arena is the possibility of handing over decisions to another character. A sort of 'quick combat' feature, it is intelligently implemented because each character you assign as leader will have their own tactical methods (ie, some Orc-haters will attack them no matter what the cost may be, while others will be more cautious).

Notepad is a clever utility. You can ask it to record every tiny feature you come across or you can pre-select it to only record the most essential features. You can even print them out for a permanent record. Interaction is utilised by the excellent Ultima-esque 'keyword' system. That is, talk to a character and their speech will include highlighted words which you can ask them about. Characters respond to you in different ways though. For example, a character may act differently and say different things before and after a particular quest. Also, stride up to a character with your swords drawn and don't expect to chat about the weather. They will fear or be aggressive towards you — common sense, really. Pity this common sense doesn't appear in the majority of other RPGs, though, isn't it?

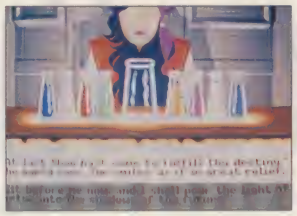
If you like puzzles, a good story, combat, complexity, you will find all of them in Magic Candle 2. The high gloss may be missing, but you can easily forgive the game for it since it offers so much more. Sure, it is a pity that the loose ends (ie, the mouse drivers) were not tidied up from the off (hence the marking down in the final rating) but Magic Candle 2 is an excellent example of a true role-playing game.

PAUL RIGBY

ALTERNATIVELY...

Ultima 6

Origin/Mindscape £35.99



The final episode in the trilogy of, as creator Richard Garriot calls them, "ethical parables". A classic series of role-playing games that concentrated upon human emotions and relationships rather than senseless combat.

This episode in the Ultima trilogy asks you to come to terms with an alien race, the Gargoyles, and try to understand them without resorting to the normal human knee-jerk reaction of booting the door down with guns blazing.

Excellent gameplay, well designed with bags of consideration to the plot and the message that it serves.

Pools of Darkness

SSI/US Gold £30.99

This is the final instalment of the Forgotten Realms epics that started with Pools of Radiance. In fact it is destined to be the final game to offer this, rather staid format (ie, interface, combat system, etc).

The relation to Magic Candle 2 is that of chalk and cheese. While MC2 relies on plot-driven, puzzle-orientated gameplay, Pools of Darkness is more akin to a tactical wargame.

Lord of the Rings

Interplay/Electronic Arts £34.99

The first instalment in a series of games that attempts to be the first Tolkien-licensed game to actually gain a good reputation. Encompassing the epic world of Middle Earth, Interplay has endeavoured to encourage the use of puzzles, the wonder of discovery and interaction into this game — in a similar way to Mindcraft.

Megatraveller 2

Paragon/Empire £34.99

Part two in another series of RPGs — this time based upon the popular board game: Megatraveller. The presentation in Megatraveller 2 is good with plenty of variety with overhead viewpoints, 'splash' still pictures conveying informative text and so on. The problem with the first game, the poor combat routine, has been improved but is still not complete. Fortunately, Magic Candle does not suffer from Megatraveller's favourite disease — bugs.

REQUIREMENTS

Magic Candle 2 arrives on three 3.5" floppy disks. A 5.25" version is imminent. The game can't be played from floppies, so a hard disk is essential. Once installed, it uses 3Mb of space. 512K of RAM is required and a CPU of 8MHz or greater is recommended.

No mouse control is disappointing. Sound Blaster sampled effects add atmosphere.

TECH SPEC

CGA ✗ EGA ✓ VGA ✓ Tandy ✓
Hercules ✗ Roland ✓ Ad Lib ✓
HD ✗ ✗ ✗ ✓

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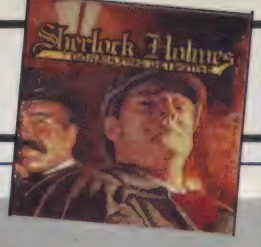
■ Sherlock Holmes Consulting Detective
■ Mindscape ■ 0444 831761 ■ £40.00



CD ROM

Sherlock Holmes C

The subject of countless films, plays, TV serials and even board games, Sir Arthur Conan Doyle's Sherlock Holmes is a natural for a computer game. And with a graphic adventure simulation background that goes as far back as the fabulous Déjà Vu on the Macintosh, Icom Simulations is just the company to do it.

True to form with its CD-ROM Sherlock Holmes, Icom Simulations has brought the immortal sleuth's stories to the games medium with the inspired use of a navigable environment. Where its early games, constrained by the floppy disk, relied on low res black and white graphics to create this environment, Sherlock uses full colour motion video.

In fact the Icom Simulation game, Sherlock Holmes Consulting Detective has to rate as one of the first CD-ROM multimedia products to reflect the ideals of a new Hollywood, intellectually as well as physically located somewhere between Silicon Valley and the old one, that has long been the dream of many game industry luminaries.

So much so that Sherlock is bound to take a place in software history as one of the first products to hint at the possibilities of interactive movies, the computer games genre that many believe will drive the popularity of the next generation of CD-ROM home entertainment systems.

Simply type Sherlock at the DOS prompt and you're launched into turn of the century London, the world of the famous detective and his foil and constant companion Doctor Watson. After the normal credit sequences and introductory screens you have the option of choosing from one of the three stories on the disc.

Billed as 'video whodunnits', at the centre of the three mysteries on disc are full-motion colour video sequences in which the story unfolds. The three stories are originally scripted by film writers and all the video footage was shot especially for the game. In the Case of the Mummy's Curse, for instance, the story revolves around the curious death of four archaeologists who had previously worked together on a dig in Egypt which uncovered a rare mummy. Are their untimely deaths a case of crypt curse, coincidence or is something more sinister afoot? It's up to you to find out.

Once you have made your selection from the three available

Come, Watson, the game's afoot and we have work to do – but will it be elementary?

stories you are taken to the game's main screen. Along both sides of the screen are eight icons, and in the centre is a quarter screen video window. The game starts with a short video sequence which introduces you to the case. In the Case of the Mummy's Curse this opening sequence, set in Holmes's Baker Street HQ, has Watson reading the London Times at breakfast. The paper brings the intriguing first details of the case of the four dead archaeologists.

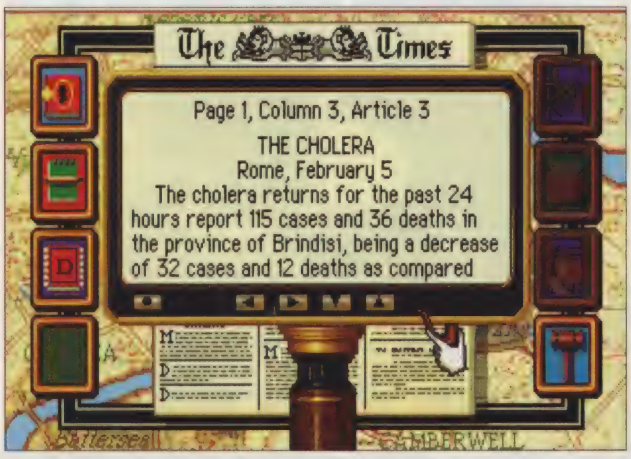
The case begins

As the video sequence closes, you take control and use your detective skills to unravel the mystery. The eight icons are the keys that unlock the clues. The first of these is the casebook which simply allows you to skip back to the opening screen and choose a new crime to work on.

Underneath that is the detective's notebook, essentially a mini text processor where you scribble down key clues as you go along. To get access to details of all the protagonists in the story you use the directory of people and places. This is an important tool from which you can launch off into the data on each characters involved in the story and get to key locations in the drama.

The London Times, from which the whole case strings, is utilised in all three stories and is a principal source of clues – a copy of the paper is included in the package when you buy the disc. You can also look over the paper on screen using its icon. Hit this and a story from the paper comes up on screen, complete with pictures. You can move about from story to story reading through not just the original story that prompts

onsulting Detective



Holmes and Watson's interests but other stories in which valuable clues can also be found.

When you first boot up Sherlock Holmes, it's the video that really catches your attention. Initially, I was sorely tempted to spend all my time jumping around the video sequences looking for the clues. You can do this using the carriage icon, through which you travel through ye olde London to interview potential witnesses and visit crucial scenes. As you move around the environment, new video sequences are fired off. The whole disc contains about 90 minutes of video spread across all three cases.

At the time the game was produced software-only video decompression was still more a subject of speculation than practice. At that time the only real product that used it was IBM and National Geographic's Mammals disc, which obviously benefited from the massive technical resources IBM could bring to bear the task. Icom has achieved as good if not better results with its own software-only video compression system. The video runs in a window that takes up about a quarter of the screen, and while it is noticeably pixellated, it is still very watchable.

As you get deeper into the gameplay you realise that the video isn't everything, and that the game's designers have built in features that actively discriminate against using the video footage as the only source of clues. You score more points if you use the other information source that game provides. This includes the London Times stories, but also the two other key information sources you can access through the main icons.

At any time you can call on Holmes's own private case files, which have details on many of the major protagonists and contain the wealth of information he has build up over many hundreds of cases.

You also have on-line the Baker Street Irregulars, Holmes's network of informants and contacts assembled over many years in the business. These include the famous Inspector Lestrade, and the London Times correspondent as well as many other characters who will be familiar to avid fans of these classic mysteries.

However you go about it. the aims of the game is to solve the case by collecting enough facts and clues to mount a case against one of the characters. When you're ready it's off to court to put your case in front of the judge. The court is accessed through the last of the eight main icons.

Initially my idea was just to look up a few characters in the directory of people and places, head off to courts, accuse someone and see if I could get it by sheer luck. The rather surly judge was having none of this and, given that I hadn't a shred of basic evidence to present, promptly threw my case out.

Broken English

One distraction from the pleasure of playing Sherlock Holmes is the evident lack of interest on the part of the producers in any kind of English authenticity. Yanks with really bad English accents abound, and there are regular slip-ups with English pronunciations, place names and vernacular. I found these amusing; to others they will be infuriating. The game obviously requires a CD-ROM, and a SoundBlaster compatible card, and can be run from DOS, or in a DOS Window on a Windows based MPC machine, making the hardware investment relatively low.

If you can stand the Americanism of the whole disc, and it's definitely worth trying to look beyond this fault, Sherlock Holmes Consulting Detective is a seminal multimedia product. At just £40, that alone should be enough justification for owning a copy. More than that, it's a genuinely engaging game which will take many hours of gameplay to solve each of the mysteries. I've seen Déjà Vu bring whole office buildings to a halt, and Sherlock has the same potential.

TIM CARRIGAN

REQUIREMENTS

You'll need a CD-ROM drive, Microsoft CD-ROM extensions to DOS, and SoundBlaster compatible sound card.

A seminal multimedia product, one of the first games to come close to interactive films.

CGA ✗ EGA ✗ VGA ✓ Tandy ✗
Hercules ✗ Roland ✗ Ad Lib ✗
HD ✗ ✗ ✓ ✓

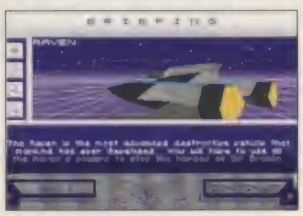
■ Stellar 7 ■ Sierra
■ (0734) 303322 ■ £44.99

CD ROM

Stellar 7

Sounding uncannily like every other evil alien tyrant you've ever heard, Gir Draxon appears between levels, at the start and at the end of the game to put in his twopenny worth. His lackey is no better, sounding like a cross between Arnie Schwarzenegger and Diego Maradona.

Clear a level of Gir Draxon's troops and he beams down a main guardian to have a go. Guardians can range from huge Battletech–style robots to strange mechanical spiders that lay sticky webs all over the place.



The briefing screen is where you can familiarise yourself with all of Draxon's troops. With the right equipment, you also get to hear a lovely young lady go over the finer points of each ship.

Remember Battlezone? It was a classic black and white 3D wireframe game in which you zipped around a sparse landscape. Dynamix has essentially taken the original game and added 256 colour graphics and some sophisticated sound. It's made a very good job of it too, especially this enhanced CD version. In addition to the original sound effects, the player is treated to a new CD soundtrack and speech, which far surpasses the quality of that available through the Sound Blaster.

Select the Briefing screens from the main menu and you get something straight out of Star Wars. As the enemy ships rotate in graphical splendour, a sultry female voice tells you about each one of them. The speech is initially impressive, but does suffer from a couple of faults. It would have been nice if she went into more depth, rather than merely repeating the two or three lines that are printed on the screen, and secondly, Gir Draxon – the ultimate bad guy – suffers from atrocious lip–synching. It looks like a badly dubbed Kung–Fu movie, the lips continuing to move long after the speech has stopped.

These are minor niggles though, and it is nice to see that at least one company is taking the right steps towards improving its existing games with CD technology, rather than just porting them across unchanged. Wing Commander is a case in point here. Although the CD version isn't identical to the disk version, the former suffers from serious technical problems that makes it less impressive than its disk-based counterpart. Stellar 7 is a refreshing change from the former extravaganza. It has actually improved with age; it's a fast and playable shoot 'em up, and it's excellently presented.

The sequel, Nova 9, is more along Wing Commander's line than a straight shoot 'em up, which means it doesn't have Stellar 7's attractive simplicity. It's probably worth hanging on for the CD-ROM version of this if you'd prefer something with a bit more depth. If you do decide to plump for Stellar 7, you should be aware that it's at its best when you've got the full multimedia kit; a Roland for the sound effects and a set of speakers attached to the CD drive, for instance. It's a bit pricey for what it is (although it's still cheap compared to many CD-ROM products), but you could do a lot worse than adding Stellar 7 to your CD collection.

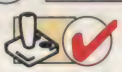
PAUL PRESLEY

REQUIREMENTS

Your CD player will need an audio out socket if you want to hear the speech and CD–based music. You don't need a hard drive to install the game, but it is recommended. And of course, as speed is at the heart of this game, the faster your machine, the more you'll enjoy it.

TECH SPEC

The 256–colour backdrops are very nice, but you could live without them.

CGA ✗ EGA ✓ VGA ✓ Tandy ✗
Hercules ✗ Roland ✓ Ad Lib ✓
HD ✗ 

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West Point Creative have now released a complete Multimedia upgrade kit for the PC. Comprising of the stunning SoundBlaster Pro card, a high performance internal CD ROM drive, MS Windows + Multimedia extensions and a host of bundled software. The CD ROM has a 64K cache buffer and 150K per second data transfer rate. Also available is a further upgrade witch includes a MIDI Kit, SB Pro sequencer and the disks - Creative Sounds, Microsoft Bookshelf, Select Ware Systems demos, and 'Jones in the Fast Lane' game. Complies with the Multimedia PC standards, giving full multimedia compatability.

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Open Mon-Sat 9am-6pm

■ Another World ■ Delphine/US Gold
■ (021) 625 3388 ■ £30.99

Has the promise of an interactive film finally been fulfilled, or is this latest opus from the creator of Future Wars just another failed contender?

Lester's gun has three firing modes: hold down the trigger for long enough and you can build up enough charge to blow up walls.

Another

"It's just like playing a film!" Aren't you just sick of reading that? Well, you've probably got every right to be, if you've been suckered by the hype too many times before. There you sit, in front of your PC, having just forked out forty-odd quid in the naive belief that your new game will make you feel like Harrison Ford or Meryl Streep, and what do you get? Some out-of-the-Ark gameplay that you've seen before (and better) on a Spectrum, tarted up with some nice between-level graphics (animated, if you're lucky) and a stereo sound track.

So, appreciating just how tired you all are of terms like 'interactive film' being bandied about in computer magazines, I'll not use it in reference to Delphine's Another World, and that's quite a struggle because I really want to.

OK, I'll be honest, it's not quite like playing a film. Readysoft has already tried to negotiate that rocky peril-strewn path with the likes of Dragon's Lair and Space Ace and we all know what went wrong with those in terms of gameplay. What Delphine has attempted to do is insert cinematic scenes into a fundamentally simplistic arcade game to highlight and enhance its most dramatic moments. And for the most part it's hugely successful.

Late in the lab

But before we get too bogged down by the hyperbole (be warned, there's plenty more to come), let's get the plot out of the way. You play Lester, your everyday Joe Shmoe jeans 'n' sneakers scientist specialising in sub-atomic research. (Admittedly, he's not quite that ordinary, but it does make a pleasant change to be able to play somebody approaching normality for once instead of a lantern-jawed star pilot or sweaty-thighed barbarian.)

While working late in the lab one night, Lester's state-of-the-art particle acceleration experiment is sent wildly out of control by a freak bolt of lightning from the storm raging outside. In a massive explosion Lester is somehow transported to a bizarre and violent alien world. Will Lester ever see Earth again? Ah well, now, that's up to you, isn't it?

Another World can be most simply described as a platform game. Using the keyboard or joystick (the former is recommended for its precision) the player must guide our man Lester around the alien environment, running along ledges, jumping over pits and chasms, beating up alien fiends and so on, using just four directional controls (up, down, left and right) and one 'action' button.

Like Prince of Persia (with which this game has many parallels), Lester's reactions to the player's control are sensitive to his current predicament. Thus, pressing 'down' will cause Lester to crouch in most circumstances, but if there's an item

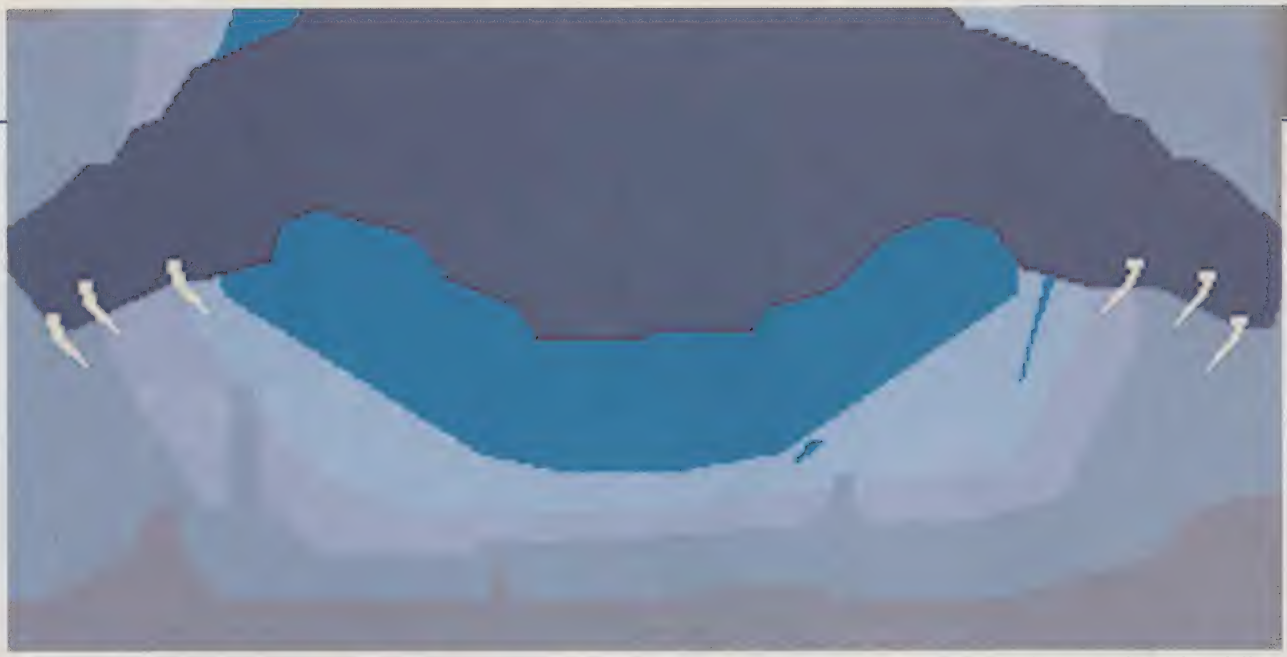
TWO MINUTES ON THE RUN

Glug! Where am I? Underwater!? And what's that moving down there in the murky depths? Swim up towards the light ...

Ah, that's better. What a strange place; we're definitely not in Kansas now. Let's go right; perhaps there's a phone or a house this way.

Oh no, something's crawling towards me. Surprisingly easy to kill, one sharp kick with my foot and they burst open like ripe tomatoes.

Ah, now, what's this beast Looks pretty fearsome. It could be friendly, but I'm n keen to hang around to fi out.



World

on the floor he'll bend and pick it up. Likewise, pressing the 'action' button normally causes Lester to let loose a volley of laser fire (assuming he's found a gun), but if he's near a switch he'll activate it.

The upside of this ambiguous character control is that Lester can be made to perform a whole range of impressive-looking actions without bothering the player with a complicated list of controls. There is, after all, nothing worse than having to take your eyes off the screen during the heat of battle to hunt the keyboard for the elusive fire key.

However, the big risk is that the you end up in situations where you intend to shoot an approaching alien but, because you're too near a door, the game interprets your action command as 'open'. All you can do is look on in horror as your on-screen persona stands around fumbling with a door switch instead of zapping the looming monster. Thankfully, Delphine has considered this problem. Thanks to some careful design of the game world, whereby combat and puzzle-solving are for the most part kept separate, I never once had to suffer the indignity of such a frustrating scenario.

Early on in the game, Lester is captured by some hostile aliens. Imprisoned in a cage he makes friends with a fellow captive and together they manage to escape. This friendly alien is a God-send. He'll happily do all the more tricky but mundane stuff, like cracking security door passcodes, leaving Lester to concentrate on the more exciting task of protecting him from the approaching alien guards. And protect him you must, because without his help you'll not be able to finish the game.

Although there is an element of adventuring in Another World, the emphasis is very firmly on the action. There are some superbly exciting set pieces: one moment Lester is dodging tumbling boulders, the next he's outrunning a tidal wave, then he's involved in firefight with two hulking aliens. Who said that the life of a scientist was dull?

You can't beat the system

OK, so far Another World sounds just like a 100 other platform-based action adventure games you've ever played. What's the big deal?

Well, it's the graphics. Or more accurately, the graphic system. Typically this style of game depicts the action using bitmapped characters and backgrounds drawn by a graphic artist. With Another World, however, Delphine has opted for a somewhat more radical approach to the genre and developed a graphic system based around polygons.

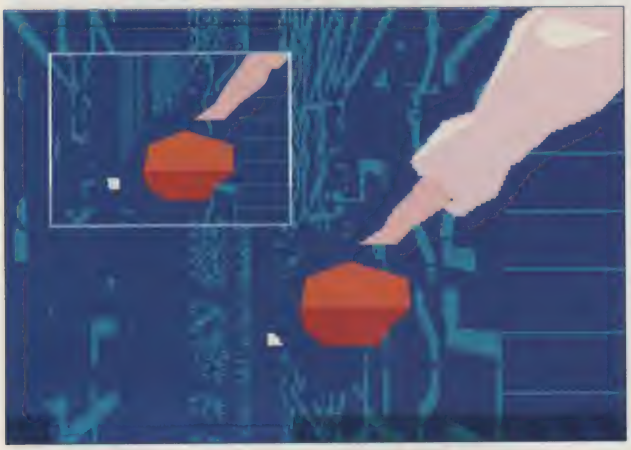
Polygons are the basic tool of the 3D programmer and are used to generate the spaceships in games such as Stellar 7 and Hyperspeed. Because polygons consume very little memory,

I was right: definitely not friendly. It doesn't look as though I'll get anywhere trying to go this way for now – I'm outta here.

Help! I'm never going to last long against this thing. It's as fast as a cheetah and twice as vicious. Let's hope some sanctuary materialises on the next screen.

And now I've run out of space to move in. My only chance is to make a lunge for this rope; maybe I can swing my way to safety.

Aaaalieee! The rope has snapped on me. At least by ricocheting me backwards I'm now on the other side of the monster. The chase continues ...



Approaching the climax of the game, Lester is pushed off the edge of a precipice (inset). Just as all seems lost (yet again!), a friendly arm reaches out to rescue him.

it's possible to achieve some incredibly fluid and convincing animation effects for Lester and his foes.

The trade off for all this super smoothness is that the actual characters lack detail. But the strange thing is that this actually works in the game's favour. The graphics have a surreal nature that enhances the feeling that Lester is exploring an uniquely alien environment.

This impressionistic graphic style also enhances the player's involvement with Lester and the aliens he meets. It works in the same way that radio drama works: because the player is given little more than a sketch of what the characters look like, he is left to use his imagination to fill in the blanks himself.

As mentioned above, polygons are normally used to create moving three-dimensional images. This is a fact that has not escaped Delphine, and it's the use of 3D or, rather, pseudo-3D images that makes Another World one of the most impressive pieces of games software I've seen for a while.

At various dramatic points in the game the program cuts from the usual side-on perspective of Lester's athletic goings-on to a more immediate point-of-view. One of the most effective uses of this occurs very early on. Lester has barely started to explore his strange new world when he encounters a giant panther-like alien which chases and then, if the player fouls up, kills him. Now, if this were a typical platform game, all you'd get would be a alien sprite leaping after Lester followed by a 'game over' screen if it catches up with him. Mildly exciting, but nothing you haven't seen before.

Consider how Another World treats this scenario. As Lester innocently ambles along, oblivious to the troubles ahead, the view suddenly cuts to a face-on shot of the creature as it drops into frame. It hunches in front of Lester for a second then roars, revealing frighteningly large fangs.

The view then cuts back to a traditional side-on aspect, as Lester attempts to flee the alien. If Lester fails, the view cuts to another face-on view of the monster as it lunges, its huge claws raking across the screen. The picture fades to red, then black, and the game is over.

Camera angles

It's such an effective device that you wonder why no-one has ever tried it before. But then again, there were moving pictures for years before someone had the bright idea of shifting the camera left and right to pan across a scene. We now take such things for granted as a staple element of the director's repertoire of cinematic tricks.

The worst criticism you can really make of Another World is that, like all good things, it's over too soon. The puzzles are not particularly hard to fathom, especially since your alien chum handles most of the more cerebral ones, and the platform action isn't overly challenging.

It was a problem recognised by reviewers of the original Amiga and Atari ST versions and, admittedly, Delphine has made attempts to beef up the PC version's difficulty level by adding the extra gun-toting alien here and there and by making some of the split-second jumps and ducks just that little bit more hairraising, but Another World is still likely to be a disappointingly shortlived experience for most games players.

A handy password system allows you to skip the terrain you've already covered, but this just makes the game all the more easy to complete. Still, while Another World lasts it's tremendous. Goodness knows how Delphine will follow this up, but I for one can't wait to find out.

DAVID UPCHURCH

PC review 8 RATED

ALTERNATIVELY...

Prince of Persia

Domark/Broderbund, £TBA

Set in the Middle Eastern dungeons of the evil Grand Vizier Jaffar, Prince of Persia is an exciting platform game featuring some extraordinarily lifelike figure animation. The animations were based on video footage of real people performing the various actions (running, jumping, crouching, swordfighting) and it shows in the stunning authenticity of the motion, even if some of the moves (like the turning on the run) are a little 'over acted'. Prince of Persia has gameplay which, though a touch simplistic (like Another World's), is addictive enough to encourage your continued perseverance even when the lure of the wondrous graphics has worn off. This game was due to be re-released at a budget price by Mirrorsoft, before that company closed. We'll let you know when to expect a re-release as soon as we hear news of it.

Space Ace II

Empire/Readysoft, £39.99

Gameplay is not the most attractive feature of Space Ace II, the most recent in Readysoft's series of so-called 'interactive' cartoons. If you're that desperate to watch a cartoon, go and buy a Tom and Jerry video instead: it's not quite as interactive (although it's a close run thing) but it's four times cheaper, lasts nearly 20 times longer and you don't have to waste valuable hard drive space on it.

REQUIREMENTS

Another World comes on just two 3.5" floppies and takes up just over 1Mb of your hard disk space. Surprisingly sluggish in places, the game can only be recommended to owners of 16MHz 286 machines or better.

TECH SPEC

Hardly uses the VGA card to its fullest but the graphics are stunning all the same.

CGA ✗ EGA ✓ VGA ✓ Tandy ✓

Hercules ✗ Roland ✗ Ad Lib ✓

HD ✗ ✗ ✓ ✓

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■ Storm Master ■ Silmarils ■ (071) 490 2944 ■ £29.99

Storm Master

Silmarils has yet to make a major impact in Britain. Can it take on the might of Delphine?

The intro sequence depicts your Ecclesiast summoning winds a–plenty as you launch a fleet off to war.

Although it's far from being a Delphine or a Ubi Soft, Silmaris, the quiet software house of France, does come up with the occasional head–turner. Boston Bomb Club and Crystals Of Arborea spring to mind as pretty respectable games.

Storm Master is another of these head–turners, but as with the other two games, it doesn't impress to a sufficient degree to make it stand out from the other world–ruling strategy games on the market. Innovative ideas are one thing, but unless the game is made to look as accessible as something like Populous, it just isn't going to cut the mustard. Storm Master has a very cold look to it indeed.

"You say neither, I say anti–aircraft weapons ..."

There's nothing fundamentally wrong with Storm Master. In fact, it is quite an enjoyable game. The challenge of keeping all seven factors of your ruling council happy, while attempting to build up sufficient strength to take on the neighbouring island of Sharkaania is quite an absorbing one. By the way, Storm Master is full of weird names like that. For some unknown reason, Silmarils decided to give everything names like Eoliä (your land), Broomf (sheep) and Koolpers (anti–aircraft weapons).

TWO MINUTES OF SHIP BUILDING...

One of the most enjoyable moments comes in Leonardo's den, designing and testing new ships. A look at the army stocks shows that we are desperately short of Oglees (catapult–firing troop carriers – useful for raids on enemy cities).

Checking out our factories tells us that we don't have any producing sails or balloons. Time to build one or two in the plains. It may cost some money, but the end result is worth it. We've plenty in the woods and mountains, so hulls and engine parts are no problem.

Leonardo is our next port of call and his master plans provide the framework for our design. Each of the points with a crossed circle can have a part attached to it. How about couple of balloons and sails to provide lift, a few propellers for speed? Whistle while you work ...

With our design finished, it's time to equip it with a crew. We're only at the testing stage so one of each will do. However, the final thing will be used to carry raiding parties, so perhaps we should stock it with a couple of extra soldiers.

Your council of seven are responsible for carrying out all the decisions you make in your perilously short time as leader. This screen also shows you when Sharkaania (boo, hiss) launch an attack on you.

To generate wind spells, your Ecclesiast must visit a temple and initiate a bizarre religious ceremony. The clanging of bells and the sacrificing of meat are just two of the many pleasures to be found.

The Inquisitor is the head of your secret service. He can send assassins to kill one of your opponent's councilmen, gather information from spies in both your territory and theirs and strike secret arms deals with far off lands.

The council of seven is the premise for the whole game. It works in much the same way as today's government, each member being responsible for a separate area of Eoliän life. Thankfully they don't all wear grey suits and are generally easy to recognise. The commander of your army is resplendent in his full military garb and the minister of entertainment is decked out in a jester's costume.

Keeping them happy is essential, as your council seems to go through more cabinet reshuffles than the Tory party (there are no women in this government either). If you ignore one councillor for too long, he'll disappear to do his own thing, effectively cutting off your control of that particular area until he decides to come back or a new one is appointed (not by you I should add). It's extremely difficult to keep them all happy and you seem to spend as much time fighting your own people as you do the enemy. It's also hard to understand why, on some later levels, they've already decided to make a getaway before you even start the game. I've heard of unpopular leaders, but this is taking it a bit far.

Happiness seems to be the unwritten aim of the game; you've to keep your own population happy while you take out the seven major cities of your opponent, all the time defending yours against him. I say unwritten because, although the plot is briefly explained in the manual, it's never really made totally clear how you go about actually playing the game. The different sections are all adequately described, but there's nothing that tells you why or when you should use them.

How many roads...?

Wind is also supposed to play a major factor in the game, at least according to the manual. In practice, it's never really much of an issue. You can plant crops, build ships, launch raids and win or lose the game without paying much notice to the winds. Indeed, I've managed to conquer Sharkaania at least three times without even bothering to use the Ecclesiast (the wind magician and minister for religion). Money was the overriding factor in most cases and using the minister for finances to make a quick deal with another presumably neighbouring country resulted in boosting the economy by more than enough Kaa (money) to finance mass ship building and extensive overseas (overair?) campaigns.

The Ecclesiast does have one of the most enjoyable moments in the game, the religious ceremony. To create wind spells – apparently useful for factories, but as I said, money

A final look at the overall thing. The troops are shown along the side, the design is shown in the middle and the estimated specs are shown at the top. Weight, speed, lift force, everything seems in order. Time to put this little baby to the test!

The moment has come! It's out on to the testing grounds to watch the new addition to the fleet either sail away or crash and burn. It starts its engines, the wind picks up, it rolls down the runway and soars like an eagle. Successful designs are few and far between.

With the design for the ships approved, it's time to start mass production and prepare to give them their first real test. An invasion is planned down to the last detail, so the troops are loaded, the catapults are drawn back and you march them off to war.

Once over the skies of the evil Sharkaania, you encounter fierce resistance from the opposing army. Their own ships of war rise to meet you and you enter the 3D combat game. Just fly around the skies as you would with any normal flight simulation and fire at will.

Apart from taking part in wacky rituals, the Ecclesiast is responsible for keeping the lands fertile enough to grow wheat.

was always a more powerful incentive – the Ecclesiast and his followers have to perform a series of rituals inside a temple. The manual describes the various rituals and when the on–screen ritual book calls for an action, you have to identify it and click on the respective follower. It's the sounds that make this fun, even though they are limited to the internal speaker. At its best, the ceremony sounds so bizarre you can't help but fall about laughing, especially when you look at all the people spinning around, bowing down or mumbling incoherently.

Storm Master has quite a few of these 'good moments', the ceremony, the ship designing (see the two minutes panel) and the combat scenes. The 3D combat is far more enjoyable than it looks, despite the fact that battles can be a little shortlived. A good combination of keypad and mouse controls ensure that you're not put off by the mass of icons at the bottom of the screen and you're left to concentrate on the approaching balloons and catapult–hurling skyboats.

Nice face, shame about the legs

As you've come to expect from French products, the graphics are absolutely first class, the two end screens especially (and so they should be, interpreted from two real life classic paintings in national galleries). It's just the rest of the game fails to live up to them.

It's a shame to have to say this, but from a gameplay stance, Storm Master is nothing special. The good ideas are very good ideas, but they're held back by the not–so–hot areas. It doesn't have the impact of Populous or Civilization and lacks the polish that would make it stand out from the other 'second division' strategy games.

PAUL PRESLEY

REQUIREMENTS

Storm Master takes up just over half a megabyte on a hard disk, although there's no installation program and it won't work without the disk in the drive anyway (copy protection). Memory constraints are non–existent and it should work with virtually any version of DOS. Playing from floppies is not a problem.

PC review 5 RATED

The mouse occasionally causes screen corruption, but it's easily cleared.

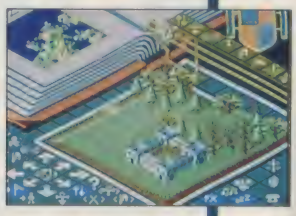
TECH SPEC

CGA ✓ EGA ✗ VGA ✓ Tandy ✗
Hercules ✗ Roland ✗ Ad Lib ✗
HD ✗ ✗ ✓ ✓

ALTERNATIVELY...

Populous

Electronic Arts £10.99



The game that turned the strategy game genre on its head, along with most of its audience. The quality graphics and excellent presentation set Populous apart from the rest of the strategy/wargame pack. Many were the tales told of instant volcanoes and divine intervention that it led to almost every magazine running in-depth playing guides, plenty of cover disks and even a Populous tournament.

Spin offs from the original included a data disk with four different styles of worlds and a Populous World Editor, allowing you to change the appearances of the sprites and landscapes. These were nothing compared to Populous II however. The sequel (on other formats) has earned accolades from almost every corner of the gaming world, taking the original game's ideas and concept and building on them to an almost astronomical degree. The PC version should be available in the Summer. Naturally, both games walk all over Storm Master. Sorry, Silmarils.

Powermonger

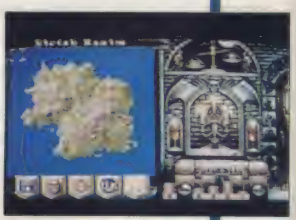
Electronic Arts £29.99

Bullfrog's game between games. When Powermonger was released, everyone expected another Populous and they were almost given it. Having discarded the creation aspect of the game – and improving the isometric graphics no end – Powermonger dealt firmly with warfare and every aspect of it, while still retaining the user–friendliness of the earlier game.

Once again you control an entire army, only this time you're up against more than one opponent. Combat is a particularly colourful affair, with each side represented by a red, green, yellow or blue colouring, which puts me in mind of the cult classic Zu Warriors Of The Magic Mountain, a Chinese ghost/martial arts film. Rent it today, it's excellent. It's also better than Storm Master, but doesn't give you the same feeling of complete control over your land.

Realms

Virgin £35.99



Graftgold's effort is more like a mixture of Powermonger and Storm Master, using Populous–style graphics. Once again you are in charge of an entire race of creatures, aiming to make your reign of command the most powerful, while destroying anyone who stands in your way.

It's neither as jokey as Storm Master, nor as in–depth as Powermonger, making it quite a nice balance between the two. Unfortunately, the lack of depth means it doesn't have the lasting appeal of either of the former two games. Nor does it have the 'big name' appeal of the Bullfrog games, which is a shame, as Realms is quite a nice piece of work.

Supremacy

Virgin £34.99

In a sense, Supremacy is Storm Master in space. There's a lot more to it than that though and Virgin's little star–spanning colonisation game is highly absorbing.

A lot of the ideas are similar to Storm Master's, the creation of ships, the control over many different areas of political life, but it does it with a lot more style and sophistication and in the long run is going to win out every time.

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■ Titus the Fox ■ Titus
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Titus the Fox

Tough enemies, hidden levels and puzzles are essential for a platform game. Has Titus' latest release got that little bit extra to make it a great one?

Titus is a sad and sorry creature. His fiancée, Foxy, was sent to the Sahara by Fox & Locks Magazine to study that rarest of vulpine species, the desert fox. Unfortunately, during a night-time photo session she was attacked, kidnapped by bandits, and forced to become a concubine in the harem of the Shah Hassan. Chivalry demands that our hero rescue her, and with your help he might just do it.

Titus goes where no fox has ever gone before, on a madcap dash through 16 levels of platform tomfoolery.

There are many dangerous landscapes ahead, taking the fox from his own doorstep to the desert. If it was just a case of catching the nearest plane, Titus would be laughing all the way to the sandbank; but he has to make his way on foot, through towns, underground, and high in the air. Predators pursue him at every turn and traps wait around every corner, but more dangerous than either of these is the game's scrolling system. It's push-scrolling, which means that you have to advance to the edge of the screen before you can see what's ahead – this has the advantage of speeding up the action, but it also throws you straight into the path of enemies at regular intervals.

Progress is made a lot easier by the variety of objects lying around. The most common of these are the ones you can pick up and throw: you can get rid of most enemies with a well-aimed empty bottle or sack of flour. Aside from the everyday items, there is also a group of special objects. Balls, springs and skateboards allow you to reach otherwise inaccessible parts of the map (the spring, for example, acts like a trampoline); heavy implements, such as anvils, can be dropped from a great height and can reveal hidden parts of the game; and finally, there's the bowling ball. This wipes out several enemies at once, but it's particularly useful for eliminating the big bosses found at the end of every third level.

All the levels have their own peculiar set of enemies and natural obstacles: there are more than 50 opponents in all, each with its own characteristics. At the end of each group of levels there is a tough boss

REQUIREMENTS

The fox comes on one 3.5" or two 5.25" disks, and you need a minimum 512K to play. It doesn't make much difference to the loading time whether or not you decide to install to a hard disk, but if you do it uses up a paltry 670K.

TWO MINUTES OF VULPINE ACROBATICS

Our hero can walk, jump, crawl, pick up, drop and throw objects. But he can't see what's coming at the far edge of the screen.

This character in front of our foxy friend is one of the easier types to deal with. See those bottles on the floor? Pick one up and throw it at your foe.

The item that looks like an oilcan reveals the password for this level. As for the diamond icons and the padlock? Well, that's for you to find out.

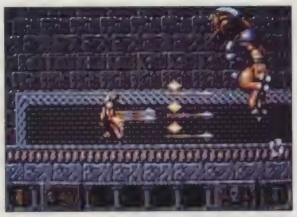
Beware flying enemies when climbing those girders or stairs. Look out for helpful objects. A select few even take you beyond the game's normal boundaries.

ALTERNATIVELY...

Gods

Renegade, £34.99

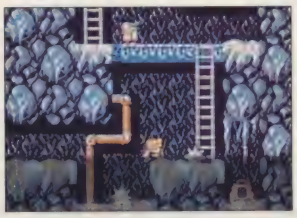
A typically polished effort from the Bitmap Brothers, with enough bonus features to make it stand out from the crowd. The graphics maintain a high standard throughout, and AdLib, Roland and Sound Blaster owners are all in for a treat, too. A variety of baddies are out to thwart your quest for immortality, including a bunch of mean end-of-level giants. Add to this gameplay which changes according to how well you're doing, puzzles by the ton, and plenty of power-ups, and you've got the best platform game yet.



Rick Dangerous 2

MicroProse, £25.99

For this second game in the excellent Dangerous series, Rick underwent a change of image, restyling his hair into a golden quiff and toting a laser-gun. However, the elements that made the original a success are found here, too: ladders, traps, secret switches, remote control guards and death-defying leaps – all in a desperate quest to save the world from the Fat Man's evil machinations. An incredible journey via spaceship, ice world, forest and atomic mud mines culminates in the final show-down in the Fat Man's orbiting palace itself. Apart from Roland and AdLib sound, it's got the lot.



to confront. You can tackle them all in three ways – by throwing objects at them, jumping over them, or by sneaking up on their blind side, picking them up and using them as a weapon against another foe. I found this method very difficult on most enemies I tried. It's a nice idea which would have been more successful had it been easier to achieve.

The same is true of the game as a whole: a bit more attention to the speed (which is slightly too fast), and more generous collision detection would have made exploration more a question of showing off your skill than having to deal with some of the annoying idiosyncrasies. On the plus side, the controls are generally good, particularly when you're using the joystick, and there are plenty of enemies and hair-raising leaps between platforms to keep your attention.

Titus The Fox isn't the best game in the world, certainly no match for the classics detailed in the Alternatively section, but it will provide platform fans with enough of a challenge to justify the money. There are only 15 levels in all, but they do get tougher, and you have a password system which avoids the annoyance of having to go back and do it all again every time you die.

GORDON HOUGHTON

Your reactions will have to be super-quick to cope with CGA mode. AdLib music is some compensation for the paltry sound effects. It plays reasonably well with keys, but a joystick is recommended for those tricky moments.

TECH SPEC

CGA ✗ EGA ✓ VGA ✓ Tandy ✗

Hercules ✓ Roland ✓ Ad Lib ✓

HD ✗ ✓ ✗ ✓

Now
let the game commence...

LURE OF THE TEMPTRESS

...I can resist everything except temptation...

Oscar Wilde

REVOLUTION SOFTWARE LTD.

Virgin GAMES

■ The Taking of Beverly Hills ■ Accolade ■ £29.99
■ 081-877 3303

The Taking of Beverly Hills

Beverly Hills is under attack from a group of ruthless terrorists, intent on destroying the entire city. Can you save it?

The Taking of Beverly Hills is loosely based on the movie of the same name, which stars Ken Wahl as Boomer Hayes. In this strategy/adventure variant, you take the part of Boomer and have to stop America's richest city from being overrun by a group violent terrorists. A daunting task – the terrorists are highly organised and utterly ruthless. By implementing a bold series of well planned moves, the terrorists have taken the entire Beverly Hills police force prisoner and donned their uniforms. They now roam the streets, killing strangers on sight, robbing and looting as they go. Furthermore, they have stolen a priceless Botticelli fresco and have kidnapped your girlfriend, Laura Sage. Your three main goals are to free the city, rescue the Botticelli fresco and save your girlfriend from a fate worse than death.

The game is very easy to play. In fact it's too easy. It begins with an overhead view that shows Boomer moving along the streets of Beverly Hills, conveniently divided into nine different blocks of buildings. Once you have positioned Boomer in front of a location you find interesting, press the 0 button on the numeric keyboard for a side view of him. This side view gives you several options. You can elect to pick up an object which may be lying on the floor, and place it in your inventory, use it or hide it. You may also choose to enter unopened doors, and so investigate further locations which have more than one room. All options available are quickly and easily performed by a few simple movements of either the mouse, joystick or keyboard.

So, you move Boomer around the city picking up objects which you think are useful to you, and hiding the rest. The latter is essential, as Boomer can only carry six objects at one time, and if you don't hide any objects you can't or don't want to carry, they will probably disappear. Progress is mainly achieved through a process of trial and error, but you may well end up quitting in frustration before the game reaches a conclusion.

Despite some good opening screens, which include digitised pictures from the movie, the graphics throughout the game are poor. The overhead screen is particularly bad, Boomer being represented by a figure that is about half a centimetre tall while the buildings he moves to in this mode are garishly coloured with poor detail. The graphics used for the side mode are somewhat better, but only marginally so. Boomer appears larger here, but some of the objects he has to retrieve are slightly blurred.

On the positive side, the game does scroll very well and the sounds, all taken from the movie, are a pleasure to listen to. I played the game using an Ad Lib sound card and was pleased

HARDWARE REQUIREMENTS

You can either run this game from the three distribution disks or install it on a hard disk, where you will need at least 2Mb of available disk space. You'll also need 640K of base memory.

PC review TWO MINUTES OF AVOIDING DEATH

To stop getting yourself killed on a regular basis, follow this procedure.

Having moved Boomer out of the police station, press 0 on the numeric keypad to get the side on view.

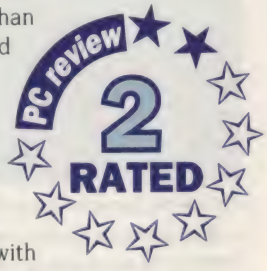
Go inside the police station and there add the police radio, the gun and the bulletproof vest to your inventory.

Next, select Laura by clickin on her face with the pointer and move her to the reception desk.

The overhead view can be used whenever you want to move from location to location.

with the results, although the sound coming from my PC's built in speaker was also quite tolerable. The Taking of Beverly Hills' major flaw is the gameplay. It is possible to avoid the corrupt and murderous police after you have performed certain actions, but you initially begin wandering around town being gunned down by these imposters on a very regular basis. This soon becomes extremely irritating and repetitive.

To add insult to injury, there is no graph or chart to indicate how badly wounded Boomer is. Sometimes when the imitation police open fire on you, it is possible to exit the screen and live, but more often than not you are killed immediately and prompted to restart the game once more. The death of your character is so commonplace that saving the game at every opportunity is a must, especially if you want to have half a chance of completing the game.



Added to this, the game is strewn with unnecessary items which just send you off on a series of wild goose chases. It is infuriating to find that you have spent several hours of game time collecting miscellaneous artefacts only to receive the message "Nothing happens" when you use them. If you disposed of all the red herrings, The Taking of Beverly Hills would take about two hours to complete. Although a certain degree of twisted logic is involved, the solution to this game is thin on both ideas and originality.

Despite containing over 120 different screens to explore, The Taking of Beverly Hills is a disappointment. Sadly lacking in atmosphere, it fails to utilise the graphic capabilities of the PC and the storyline reminds me of the kind of adventure you would have seen on the market around 1987. It is best described as more of an endurance test than a challenge.

WAYNE LEGG

TECH SPEC

The bleeper generated sounds are quite good, although for some reason they are quite low in volume.

CGA ✗	EGA ✓	VGA ✓	Tandy ✓
Hercules ✗	Roland ✗	Ad Lib ✓	
HD ✗	✓	✓	✓

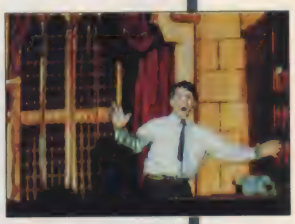
ALTERNATIVELY...

Home Alone
Capstone £29.99

One Capstone film licence probably a little better known than The Taking of Beverly Hills is Home Alone, the box office smash hit of last year. Little Macaulay Culkin's been accidentally left at home while the rest of his family take a Christmas vacation in Paris. While he's busy living it up (you know, using aftershave, looking at his brother's dirty mags, etc.) a couple of housebreakers have targeted his house for their next little spree.

The game centres around Mac's efforts to stop the burglars by setting up traps all over the house and fighting the bungling burglars once they start their robbery. While the thought of seeing the million dollar kid getting beaten into a pulp by a couple of villains is certainly appealing, the game is even worse than The Taking of Beverly Hills. Not recommended by any stretch of the imagination.

Countdown
Access £29.99



An altogether more promising offer is Access's tale of espionage, double–crosses and danger in a top secret asylum. You wake up in a small cell, with no knowledge of where you are, how you got there or even who you are. From there, you have to put together all the pieces of your missing memory (with the help of some absolutely superb video animation sequences), find a way to escape and eventually save the world (almost).

I won't go into the plot as working it out is half the fun, but Countdown is an extremely challenging and enjoyable adventure, and even though it isn't a film licence per se, it's very reminiscent of an early sixties Harry Palmer film.

Once there, pick up the electronic entry key and start heading towards the basement.

Explore the basement until you come across the room which contains the police radio, which you should collect.

Use the electronic key once more to enter the second door and then locate the terrorist's computer.

The black dots on the map represent the police. Avoid them like the plague and you should be able to survive.

■ Elf ■ Ocean ■ (061) 832 6633 ■ £29.99

Elf

Cute games have been done before. Platform games have been done before. Cute platform games have been done before. That's not going to stop Ocean, though

When you think of what a PC is capable of in these sophisticated times, you can't help but wonder if there's any room left for platform games. Should we subject ourselves to another dose of pixel–perfect leaps of faith? Or should we just leave them to the console owners and get on with our ultra-realistic simulations of NASA shuttles or film-quality adventure games? To make it really worthwhile, any new platform game has to offer something that goes beyond platforms and colourful graphics. Something like Prince Of Persia, which used video-enhanced images for its animation, or Gods, which is so deep and has so many clever puzzles and challenges that it still rides high in the charts today.

At first glance, Elf appears to have nothing to make you stop and go 'ooh', just semi–cute sprites, puzzles that are little more than give the right object to the right person (and not always in the most logical order) and the usual fast-moving death and destruction. These aren't helped by the inclusion of 'standard arcade game plot no. 43b'; your girlfriend Elisa has been kidnapped by an ultimate villain and you've got to go and get her back by romping through six different worlds.

This might have been more credible if it had been displayed in some sort of intro sequence, but no. Instead it's just a ream of text in the manual and on the back of the box that's not likely to be read anyway. For the most part you'll know that you have to rescue your girlfriend, but you won't know why, who from or where you're going. You'll just know that you're going to get there, you're going to kill him and you'll probably rescue her unless Ocean has decided to risk a sequel and therefore whisk her away right at the end (hey, the rest of the plot has been predictable thus far, why not the ending too?).

One special item is the flying machine, a bizarre contraption that allows you to ... fly! Soar around the skies, swoop in on the bad guys and explore those hidden bonus rooms that are only accessible with this strapped to your back.

Lack of information aside, the first level starts merrily enough, with bad guys trying to kill you from all sides and not a lot of room to bargain with. You start near a huge door and a strange old man, grinning perversely. I've left the details of this initial level to the two minutes panel, but suffice to say, these opening few screens introduce you to the talking to people, finding the required objects and trading them side of Elf.

This is possibly the one area that enables Elf to offer that little bit more depth than your average platform game. Being able to interact with some of the characters, even if it's nothing more complicated than asking what he/she/it wants. You can, in fact, talk, bribe, look at, activate, use item on, drink or eat

PC review TWO MINUTES IN AN IRISH DISCO

In order to open the gate at the end of Level 1.1, first find the uncooked chicken and the bowl of corn that are lying around.

Next, find the bird, sitting near the ground. Call up the interaction screen (as indicated by the flashing question mark) and select Talk.

Talking to it reveals that it's hungry so give it the bowl of corn. It'll reward you by dropping a feather. Time for a quick pow wow with the Indian chief.

Take the feather to the wigwam, hidden in the trees. The Red Indian wants the feather for his hat. In return, you'll receive a newspaper.

Not every level involves puzzle solving. One or two, such as the docklands area, just involve going from left to right, activating platforms and timing your jumps.

Once the forest has been successfully negotiated, Cornelius' next stop is the ruined castle site, atop a huge mountain. Not only do you get to mess around in the castle's rafters, you get to explore the skeleton-filled caves below.

Whenever you reach the end of a whole level, you have to battle the obligatory guardian. The backdrops are particularly nice here, a slight out of focus effect working in beautiful contrast to the main sprites.

the object in question and this wealth of options adds no end to the challenge created. It's a pity that this theme of interaction wasn't kept up throughout, but more of that later.

Cute currency

A lot of the game's other aspects have also been well thought out, while others appear to have been thrown in 'for a laugh'. Take the currency, for example. Shops are dotted around the levels allowing you to buy weapons, power ups and other miscellaneous items of destruction. Unfortunately these all require an appropriate amount of the local moolah and different amounts of herbs and spices, all of which can be picked up across the various levels. Nothing so strange here you might think, until you find out that the local currency is pets. Furry animals. Domesticated mammals. Pets.

You see, there aren't only bad guys on the screen at the same time as you. There are also a fair amount of cute animals that should be collected rather than shot at. Why trade in pets? Beats me. It's all very, very silly and, to be honest, fits the rest of the game perfectly.

Another of the really clever ideas that Elf contains is the haunting of yourself. Whenever you lose a life, you leave behind a gravestone in the spot where you died. Not only are these useful map references, they also contain your dead spirit who would like nothing better than to see you join him in his

Find the WC and give the paper to the man inside, upon which he'll give you a box of matches. You now have everything you need.

Find the cooking spit and use the matches on the fire. Once it's burning nicely, use the chicken on the spit and you'll cook it to perfection.

Take the roast chicken to the man guarding the gate and once he's filled his face, he'll open the gate allowing you to progress to level 1.2.

Having sorted out the rest of level 1 (I'll leave the details to you), you'll end up in the forest guardian's lair. A quick battle to the death is in order here.

Around the levels you get to pick up herbs and pets. Pets are the local currency and are spent in the various shops to be found. Here you can buy all manner of directional weapons, power ups and special items.

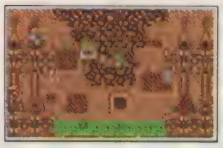
peaceful resting. Hang about in the area of your tomb for too long and up pops your ghost (a green version of yourself) to follow you around and drain your energy. Very clever.

You can't fault Elf's presentation either. The graphics are very clear and colourful, capturing the humorous spirit of the proceedings perfectly and the out of focus backdrops used in the guardians' rooms are stunning, making excellent use of the PC's 256 colours. Everything moves really fast too, with little or no speed reduction when a mass of sprites are on the screen.

The sound matches this quality and one thing non-sound board owners don't have to worry about is the usual cacophony of noise that passes for internal speaker music these days. Obviously a Roland, AdLib or Sound Blaster card would add immensely to your enjoyment, but for those not so fortunate to own one, you can rest in the knowledge that the speaker music is anything but offensive and hardly irritates at all. A refreshing change from most games.

A very welcome option is the ability to save your game between levels. There aren't many games that do this, forcing you to play through the early levels every time you load it up. There are seven slots and it's simply a case of pushing a button when the option comes up, waiting for less than a second and then carrying on. Quick, simple and so much better than those awful password systems where you know that whenever you want to play the game, you're going to undertake a frantic half-hour search for the scrap of paper you were writing the codes on.

There is a serious problem in the game's design though, one that cannot really be overlooked. The further you go in Elf, the more you experience a feeling of 'drying up', as though the programmers came in on a Monday, full of enthusiasm and designing puzzles a-plenty, then as the week wore on the ideas started to run out, so they started rehashing previous levels and becoming less and less enthusiastic about the whole thing (and by Friday they'd even resorted to a desperate 'throwing in' of a couple of standard left to right shoot 'em up levels). Fortunately, just as you're thinking of packing it all in and going back to Gods, it appears the weekend arrived, everyone had a good rest and came back in the next Monday to do the final level as refreshed and alive as they were when they started.



The end is nigh

The last level, you see, is an absolute corker. A complete change of pace from the previously waning shoot 'em up bits. I must confess, the Giger-inspired aliens struck me as a little odd (as did the laser carrying soldiers on a couple of the earlier levels) and for a game that has stuck firmly to the fantasy genre, the sudden leap to science fiction could be a little offputting. It suddenly changed the whole mood of the game.

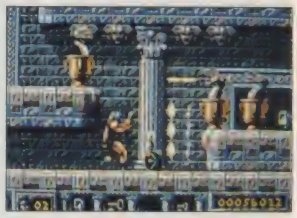
The programmers have taken the standard idea of rescuing your girlfriend and turned it into a thrilling finale to the game. The idea is to search the evil one's castle, looking for the 10 winch mechanisms that are slowly lowering your beloved Elisa into a pit of boiling oil. A nice touch is that you can pop into the room where Elisa is at any time you like, but this will only serve to waste time.

There are three ways in which the game can end. One where you rescue Elisa from the pit, but die in the final confrontation,

ALTERNATIVELY...

Gods

Renegade £34.99



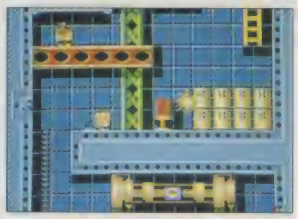
When it comes to platform games that require a bit of thought, Gods is right out there in front. Some would argue that it's one of the best games the Bitmap Brothers have ever produced, others would say it's the best game anyone has ever produced. Me? I take a slightly less enthusiastic view of it.

There's no doubting its success or playability, but for me it always held a certain user-unfriendliness about it. Personally, I'd take Elf any day of the week but would advise anyone else to really check it out before discarding it. You'll probably be one of its millions of admirers within seconds.

Rick Dangerous 2

Mirror Image £9.99

While Gods may be the current darling of the media, when Rick Dangerous 2 first came out, nothing else stood a chance. A follow-up to the equally brilliant Rick Dangerous, the cartoon graphics, fiendish puzzles and traps and ultra-enjoyable lunacy of it all combined to make one of the most playable games of the late 80s.



Even today it's still immensely playable and with the original currently riding high in the budget charts, as soon as no. 2 hits the 10 pounds barrier, snap it up straight away, you'll thank me for it.

Prince Of Persia

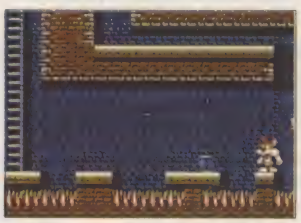
Domark/Broderbund £30.64

Another platform classic but this time for another reason, the graphics. Modelled on real–life video images, the sprites have the most realistic movement ever seen in a game (still) and what's more, it doesn't make it uncontrollable. Not only are the graphics excellent, the gameplay matches. Prince is a very cleverly designed game that produces an amazing atmosphere and includes one or two genuinely heart-stopping moments. Everything you ever wished for in a Sinbad movie comes true here, from death-defying leaps across yawning chasms, filled with sharpened spikes to ghostly mirror images that hinder you at every move. A truly amazing game.

Titus The Fox

Titus £25.99

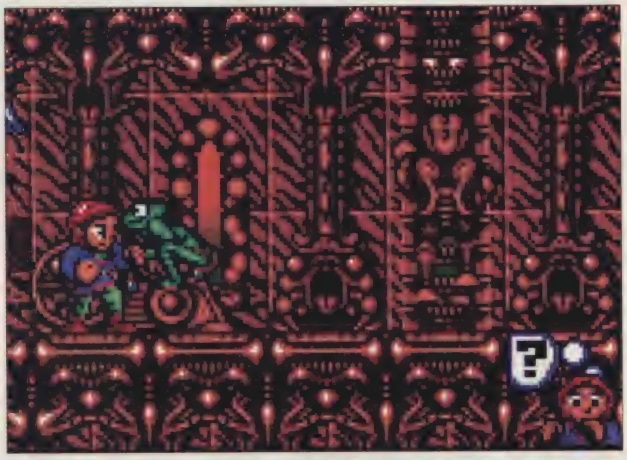
Reviewed this very issue. From the people that brought you the 'cult' hit The Blues Brothers comes this everyday story of an Arabian fox looking for his sweetheart. Cuteness galore, combined with some very clever puzzles and object manipulation makes Titus quite a playable little number.



I won't go into too much detail (read the review) but I don't think it's going to be everyone's cup of tea, mainly due to whether or not it uses a similar flick-screen method to that seen in The Blues Brothers. Still worth a look though – before you buy it, if possible.

REQUIREMENTS

Little is required from your setup to get the game working. A meg or two on your hard drive and a decent processor speed are essential, but the EGA, CGA and Hercules modes are easily tolerable. Sound boards just add to the proceedings and a lack of one doesn't take anything away.



Not all of the inhabitants are there for the killing. Whenever you see the little question mark flash up in the bottom of the screen, it means that you can call up the interaction screen.

thus leading to one end sequence. Another where you kill off the big guy but fail to find all 10 of the winches, in which case you lose the love of your life but save the world – small consolation. Then there's the ultimate ending in which you rescue Elisa, kill the bad guy, save the world, feed the cat etc.

PC review 6 RATED

I was disappointed by the actual end sequence (I have only seen one of them, but I can pretty much guess from there how the others look). Unfortunately, really good end sequences are few and far between these days and considering the fun that was had actually getting there, I'm quite prepared to forgive them for this failing. A nice animation wouldn't have gone amiss though.

Elf has nothing fundamentally wrong with it, everything is professional, playable and, to a certain extent, enjoyable. The lack of enthusiasm between the first and the last levels provides the main stumbling block, a fall from which it never really picks itself up quite enough. It's far from being a bad game, but as I said, it doesn't do enough for the platform genre to make it worth considering in this PC world of simulations and realistic looking 'alternative reality' games.

PAUL PRESLEY

Some of the VGA backdrops are gorgeous, but lower resolutions hardly offend. The music is also pretty good and surprisingly the internal speaker isn't as harmful to the ears as it could have been.

TECH SPEC

CGA ✗ EGA ✓ VGA ✓ Tandy ✓

Hercules ✗ Roland ✓ Ad Lib ✓

HD ✗ ✓ ✗ ✓

■ Fort Apache ■ Impressions ■ £29.99
■ 071-351 2133

Fort Apache

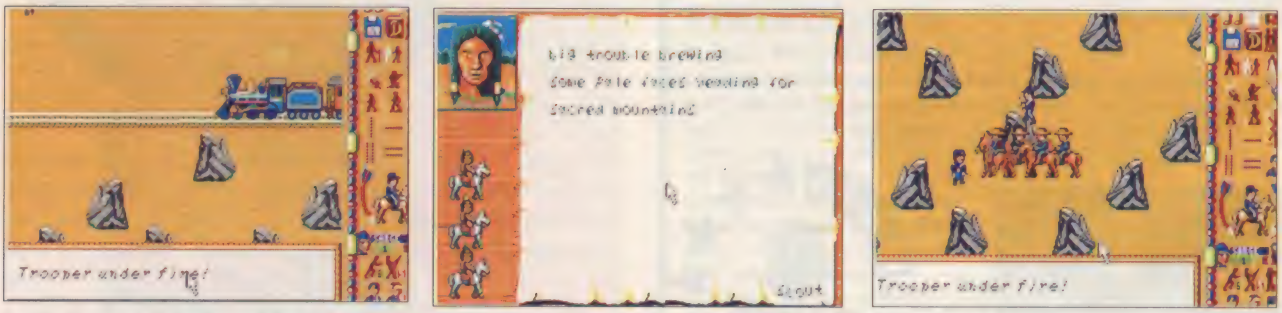
A couple of years ago Impressions had the bright idea of basing a strategy game on the mechanics of table-top war games; the idea being that it would appeal to players who preferred to control individual troops as well as the broad tactical sweep of the battle. The result was Rourke's Drift, a recreation of the famous Zulu battle in which an outnumbered English garrison managed, against all the odds, to hold out against the enemy.

While the system was a little rough around the edges, and the graphics left a lot to be desired, it all hung together quite well. Fort Apache uses the same system of game play, but, as the title suggests, sets it in the Wild West.

The player controls an undermanned cavalry outpost situated between a collection of homesteads and Injun' country. Your task is to keep the peace, not an easy task with bandits and rustlers on the prowl.

Impressions have expanded the scope of the system to provide more of a management aspect. You have to check in regularly with your three Indian scouts for reports, write memos to your superior requesting more men and horses, and set up patrol routes. After you've tackled the tasks presented to you, the day ends and you wake up to a brand new set of problems.

This is the territory you have to patrol. It may look expansive here, but in reality it's pitifully small.



As you can see, Impressions has gone for the cute approach when it comes to graphics, but they don't really add anything to the game.

Your ultimate aim in Fort Apache is not just to win battles, but to take your raw recruits and make them into real men. You do this by sending them into the thick of the action. Those that survive several campaigns can be packed back off to HQ for a decent post.

Whenever there's a hint of action you get to give orders to each man individually, ranging from mounting or dismounting horses to firing a shot or changing weapons. While the apparent control you have over the battle is impressive, it doesn't really work. The reason it doesn't work is because the whole game runs in real time. The action pauses every time you want to give a man a command, but keeping track of every one of them is impossible and things soon become very messy.

Besides this, the control is sluggish, especially if you're using a slow 286, and, therefore, trying to select individual men in the thick of battle can get extremely frustrating. The game would actually be improved if Impressions reverted to an old-fashioned melee round system, in which the actions for each man could be selected, and then a few seconds of the battle played out, and so on.

The basic idea behind Fort Apache is a good one, but the game system is seriously flawed. Neither is it helped by the substandard graphics and sound. If Impressions make a serious effort to rectify these faults before producing another game with their 'miniatures' battle system, then they may have a winning strategy game, but Fort Apache just doesn't deliver the goods.

LAURENCE SCOTFORD

HARDWARE REQUIREMENTS

There's just a single disk, and you won't need to install it to a hard disk, although Impressions recommend that you do. You'll also need 640K of base memory. The game is slow on a 12Mhz machine so if you have an 8086, forget it.

TECH SPEC

Keyboard control is possible but so unwieldy as to make it not worth the effort.

CGA ✗ EGA ✓ VGA ✓ Tandy ✗
Hercules ✗ Roland ✗ Ad Lib ✓
HD ✗ ✗ ✓ ✓

B17 Flying Fortress

It's a flying experience you'll never forget

We were just kids really and it was our first time away from home. We had 25 tough combat missions to complete before we finished our tour.

We called her a Fortress but she sure didn't seem like one when we were stuck in tight bomb run formation over the enemy target with devilish black flak clouds bursting all around us.

Then, after the bombardier yelled 'Bombs gone!' the mad scramble for home. All ten of us watching for bandits and calling them out: 'Tail gunner, belly gunner, right-waist gunner' as they swept past spitting out shells.

When we had a good run, knocked out a few fighters and were approaching the English coast, still in tight formation; that's when she felt like a Flying Fortress.

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The Games Th

REVIEWED THIS ISSUE

ANOTHER WORLD	RECOMMENDED, 8 RATED
HEIMDALL	RECOMMENDED, 8 RATED
DISNEY ANIMATION STUDIO	8 RATED
PACIFIC ISLANDS	7 RATED
ELF	6 RATED
MAGIC CANDLE 2	6 RATED
TITUS THE FOX	6 RATED
STEEL EMPIRE	5 RATED
STORM MASTER	5 RATED
FORT APACHE	3 RATED
THE TAKING OF BEVERLY HILLS	2 RATED

PC review THE GAMES THAT GOT AWAY

We would love to be able to review every game that ends up in our postbag, but if we did that PC Review would soon turn into an expensive doorstop. So we

QUEST AND GLORY
Ubisoft, £34.99
Excellent value for money compilation pack containing the original 3D strategy game Midwinter, the graphically stunning role-playing adventure B.A.T., The Bitmap Bros's isometric adventure Cadaver and Image Works's Bloodwych.

P.C. GAMES COLLECTION
Domark, £39.99
A compilation to suit all tastes containing Incentive's 3D adventure Castle Master, driving simulator Hard Drivin' 2: Drive Harder, the classic board game conversion Trivial Pursuit, the flight sim with a difference MiG-29 Fulcrum and the arcade conversion Escape From The Planet Of The Robot Monsters.

BARTON CREEK COUNTRY CLUB
US Gold, £17.99
A new course for the best-selling Links: The Challenge Of Golf. Barton Creek takes you to Texas and displays some of the most naturally beautiful landscapes in the world in full 256-colour digitised VGA. Requires the original Links to play.

MYSTICAL
Action Sixteen, £9.99
Arcade action involving a young magician searching for lost potions.

IAN BOTHAM'S CRICKET
Celebrity Software, £29.99
All-action cricket game endorsed by Guy the Gorilla himself. Contains digitised pictures of England's hero and allows you to take part in a full one-day international.

GO SIMULATOR
Infogrames, £30.99
Everything that the Go enthusiast could need is provided in this simulator of the classic Chinese board game. Coloured pebbles, wooden boards and full play analysis can be yours.

RESOLUTION 101
GBH, £9.99
Millennium's 3D shoot 'em up taking you into crime-ridden streets of Los Envegas. Fast-action 3D combines with a budget price.

A QUICK GLIMPSE ...

Quest Or Glory **PC Games Collection** **Barton Creek** **Country Club**

ompromise by reviewing an interesting selection rom the software available, not necessarily the est! But to keep everyone happy here's a quick ound-down of everything else that should be in the hops soon.

WHATEVER HAPPENED TO...?

If you've eagerly turned to the review pages to check out a game that has been previewed and advertised recently only to be dismayed by its absence, you'll probably find it in our lame excuses' Hall of Fame.

ULTIMA UNDERWORLDS

All we've seen in the office is a self-running demo version of the first few levels, a demo of which you can see

yourselves in most good PC games retailers' windows. We were expecting a package with a completely finished version inside to arrive from the States with Origin stamped all over it, but all UK distributor Mindscape has been able to offer in defence of its absence is something about US disk mastering taking its time. Review almost definitely next issue.

PC REVIEW'S BEST BUYS

This month's PC Review Recommended games are Heimdall and Another World. You'll find these titles on specially dedicated racks in 100 of the leading software stores around the country. Set up in conjunction with Centresoft, the PC Review Reccomended scheme helps you to make the right choice when it comes to buying your games.

Previous games to have received the PC Review Recommended accolade are:

SHUTTLE
TWILIGHT 2000
THUNDERHAWK
STAR TREK: 25TH ANNIVERSARY

SHAREWARE

For those of you on a tighter budget than our recommended list allows, you could always check out the PC Review Shareware section starting on page 139. Covering everything from games to personal organisers, the Shareware section is your indispensable guide.

ystical **Ian Botham's Cricket** **Go Simulator** **Resolution 101**

"Miss this and you will regret it forever"

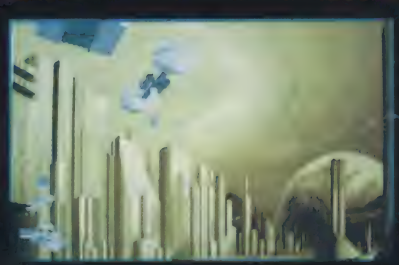
"Anyone who has been keeping an eye out for this will not be disappointed, and should await its release with bated breath...Epic is one of the best products I have ever played - the depth of gameplay and graphics are of a truly stunning standard."
GAMES X

EPIC

"Fast just isn't the word for this 3D. The image update is blistering!"
ACE

"The game's graphics and presentation are nothing short of stunning, and there's a great wad of playability in there too. Ocean have never had it so good!"
ST ACTION

"The overall feeling you get is one of awe"
ST ACTION



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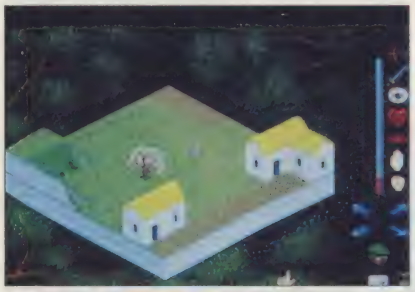
QED

We've an extra large tips section this month which sets sail with some cryptic clues to The Secret of Monkey Island II, continues with the second level of Gods and winds up with a concluding look at SSI's Eye of the Beholder II.



CIVILIZATION

Steven Kilcline of Malvern has discovered a very useful way of gaining one-upmanship in Sid Meier's superb follow up to Railroad Tycoon. Push these keys in sequence with Shift held down: 1234567890QWERTYUIOPASDFGHJKL, then repeat the sequence with Alt held down. A number will now appear in the picture of the palace, and the world map in the corner will be brightly coloured with the unexplored areas showing.

This cheat will allow you to watch your opponents move (even the moves that you don't normally see), and see where opposing units are travelling to by clicking on them.

Clicking on an opponent's city allows you to do anything with it that you can do with your own cities, like change the item in production, selling city improvements and changing the labour divisions and allocation.

FLOOR 13

The Machiavellian Roger Lightman, resident of North London, has discovered these little snippets while making sure that the government isn't toppled:

1. The judge in the satanic abuse trial is phoned by a reporter. She is the one who writes articles about him.
2. Check out the supplier in the Win Chen Restaurant.
3. The Jack the Ripper type plot has a royal connection.
4. In the EEC health scandal, someone is helping Greenpeace.
5. The Cecil Parkinson plot involves a rebel assassin. Find him before he kills 'Love Bunny'.
6. Don't worry about solving all of the Grand Master's problems. There are more of his plots than are needed to succeed.
7. Don't trust the police, they have their own motives.

ELITE

J.Lacey has a hint for anyone having trouble transferring a commander from 5.25" disks to 3.5" disks. Just change the status of the files so that archive attribute is off.

WING COMMANDER

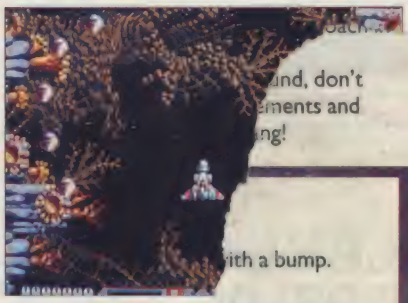
If you are finding some of the missions in Wing Commander 1 or 2 a little tricky, then Ian Roughley from St Helens can help you out. Start the game by typing either:

```
WC Origin -k
  or
WC2 Origin -k
```

The O must be upper case and the rest in lower case.

The -k will give you full shields all the time, and the Origin will destroy any ship with the brackets round it if you press Alt and Del at the same time. Be careful you don't blow up your wing man.

Ian recommends that you only use these cheats for missions that you find absolutely impossible, so that the game is not spoilt for you.



...und, don't ...ements and ...ng!

...ith a bump.

XENON II: M...

...u find it all a bit ...d get pointed in ...further clues will be ...

For our more tec... readers, Walsal... come up with this ...tting down to it for free at the first ...eep your sights high up copy of the disk, ...ent your match you'll or another sector e... change the SHOP.D... search for the byte s... F4 01 58 02 E8 03, ar... from this point throug... text beginning "There i... on your ship", with zeros...

We should point out at ... that any backup copy of the p... you make must be for your own... It is illegal to make copies of the di... give, sell or loan them to other pe...

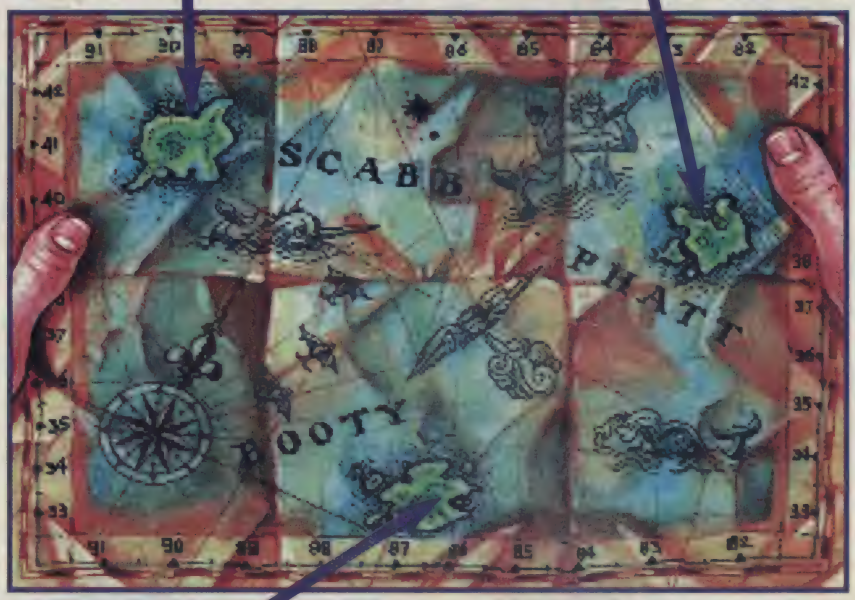
ULTIMA V

Are you stuck for cash? Then take heed of Paul 'AKKKMAN' Noble, who hails from Newcastle Upon Tyne, who has had valuable experience in this respect. First go to Minoc on the North coast. When you get there, go to the North West corner and search the tree for the skull keys. When you have these, retire to the healers for the night. Next day, wait outside the healers until about noon, when people are going to lunch. A merchant will walk up to the North West corner. Follow him (not too closely), and get the keys from the tree again. Repeat this about four or five times until you have approximately 25 skull keys. Now travel back to Castle British (this journey takes about a day), and go down into the dungeon. Half way along the bottom there is a magic door. Use the skull keys to open this door. Inside there is a lot of treasure. Clean it out, then climb up the ladder and go back down. Open the door again and all the treasure will be restored. Repeat this process as many times as possible, but remember it is always handy to have some skull keys spare.

One other thing. When you get arrested, don't kill the man in your cell as his brother brings some keys to escape with.

QED The Secret of

This brilliant sequel to the highly rated Monkey Island I contains some tougher problems than its predecessor. As in SM1, the story is divided into four chapters. Here veteran adventurer Robin Matthews presents some cryptic help for would-be pirates.



PART ONE: THE LARGO EMBARGO

To complete part one you will need to lift the embargo imposed by that meanie Largo Le Grande. This involves obtaining the ingredients to construct a Voodoo Doll of the despot, and getting money and a lucky charm for your prospective marine taxi-driver.

DOLLY MIXTURE

Your Caribbean Sindy doll needs one item from each of the four Voodoo groups.

1. Something from the *dead* (use the ... the sign near the bridge, in the ...

... from the *head* (get Le ... ff in his room – first free ... e cutting edge gained by ... for a bloody lip).

... m the *body* (paper with ... e bloody lip).

... m the *thread* (an old gag ... ors, buckets, swamp ... s laundry with the ... locked doors).

...TAIN

... ye' to replace the ... n't be a Wally. ... o arrange for there ... Bloody Lip's kitchen. ... igator food, string ... ook in the soup.

...O: THE ...ECES

... on Cap'n Dread's houseboat, ... x up the parrot chow, you'll ... er. The main element of part two ... t for the four parts of the map to lead to Big Whoop. You must find all four parts and then take them to Wally the cartographer, hoping he can identify which island it is.

The four parts are as follows, although they can be collected in any order:-

CAPTAIN MARLEY'S

(probably the most complicated)

To get the first map piece you'll need to join the party. To do this you require a fancy dress costume and an invitation. The costume will, in fact, solve both.

Set sail again, but don't go 'fast', and, if you have an arresting experience, you're on the right lines. The skeleton is the key to a shaggy dog story, but check out the property locker for an all-enveloping result.

Alley oops, now for the Wheel of Fortune, and follow the urchin to see the cheat. The password is a real worry if you don't catch on.

NOTE: If you want to work out the 'password' puzzle yourself, don't read the panel below.

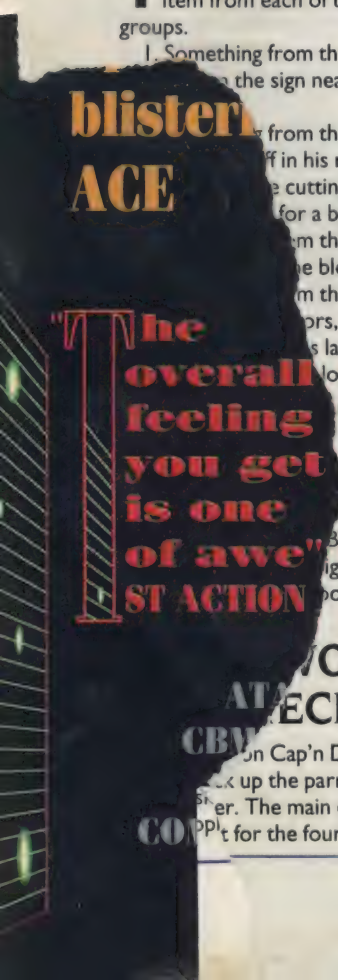
To solve the 'password' puzzle, note the number of fingers shown in each sequence – they will be the answer to that riddle, i.e. ignore the first number you are told, and ignore the second set of fingers you are shown in each series.

If you've sorted the password code you can try and break the bank, although you'll be lucky to have more than three spins.

One of your prizes is what both the guard, but also the costumier requires ... Partying will put the map piece in your hands although another man's best friend may ... things.

... yourself at the mansion and do the can-can for the chef! Don't let him

Wally's in trouble, and only you can help him. But what do you have to do? And how do you go about doing it?



General Hints

■ At the library, check the catalogue and note any relevant titles.

■ Items in the inventory can be interactive.

■ You will have to travel back and forth regularly between the three main islands.

■ Go back to locations, as solving problems may set a flag that will change things in a previously visited location.

■ There are many occasions when things are not quite what they seem – don't take anything for granted.

catch you round about, and you'll win the race for the raw prize. 'Gone fishin' is the order of the day for another race, but this one is without a catch!

By now you're poles ahead, and a cliff-hanger will take you on, but will you smile for the birdie? If you didn't get your oar in with Elaine you may have to backtrack, or you won't fill those holes!

Some running repairs may now be on the cards, but then to higher things you will aspire.

A paper chase is almost done, but a dilemma may need a friend, a best friend? This finally should secure your find. Don't worry, the rest are not as difficult!

LINDY'S

This part of the map is now owned by the antique dealer on Booty Island. He will only part-exchange it for a sunken ship's figure head. This means a ship's charter from Kate, which requires 'loads of money'. Winning the spitting contest will raise such funds.

To win the spitting contest you will need to combine:

- **Cheating**
- **Chemistry**
- **Wind**

Cheating is by deceiving the organiser that a mail ship has arrived. Blow the ship's horn and then move the pegs.

Chemistry is involved by cooking up the right colourful potion from those available from The Bloody Lip. Clues are about as to the right choice.

Wind is purely a matter of observation and timing.

RAPP SCALLION

Going round in circles? Don't get in a spin, just try a little lateral movement in the region of the head (yours that is) ...

Rapp owned the Weenie House and was fried! To solve this one you need the crypt key. This means you must literally put nails in Stan's coffin. To get the necessary equipment, you must cause an emergency on Scabb Island by practising your handicraft on the sleeping victim!

Going hammer and nails will keep Stan coffin' and, as long as you've been reading the right books, soon you'll have a use for one of the potions in the fortune'ate place.

As long as you do as Rapp says (and let him know) you're three parts there.

MISTER ROGERS

Access to the cottage and winning a challenge (hic!) is the answer here. Monkey around in the bars, using a slipper to stop the rhythm to gain a friend. Think tooled up to pump out a fall and reveal a hole. The old campaigner will not be fooled with tricks – unless you're half groggie. (This is probably the most obscure puzzle of the whole game).

Kate has what you want, but you must frame her to achieve your aim. Keep posted, eh?

Half groggie you'll be another's knock-out, and, to stop your fall from grace, open up the shutters, reflect and statuesquely look afar.

Well done. You've now completed Part Two.

Better find out what happens next , or that'll be your number up.

PART THREE: LE CHUCK'S FORTRESS

Once you have found all four parts of the map, take them to Willie, who will send you on an errand. Certain things will happen which will result in you being sent packing if you take the right steps.

You have now stepped into the lion's den. Your quest will be to free your pal. The corridors will provide the key and you should be able to feel the best approach in your bones.

Then, if you're hanging around, don't forget your previous achievements and soon you'll be free with a bang!

PART FOUR: DINKY ISLAND

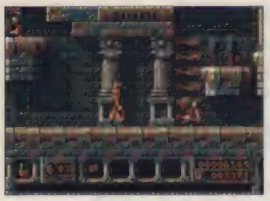
If you escaped from the fortress, you've now come down to earth with a bump. You've made it to Dinky Island, now for Big Whoop!

A little beachcombing will stand you in good stead, especially if you find it all a bit too salty. Don't take the money but open up the box and you should get pointed in the right direction. If you have the opposite leanings, the route to further clues will be in your grasp. Lager louts beware!

Don't forget to reward the help and you will soon be cross. Getting down to it shouldn't be a problem but, when you fall between two stools, keep your sights high to progress. By now you're probably in the dark, but as you've spent your match you'll have to get switched on to an alternative answer. The final sequence is quite traumatic but you must follow a previous recipe for success.

Four quests must you solve, one a sample, one 'familyiar', one 'back' at the booze, and finally an uplifting experience.

GODS

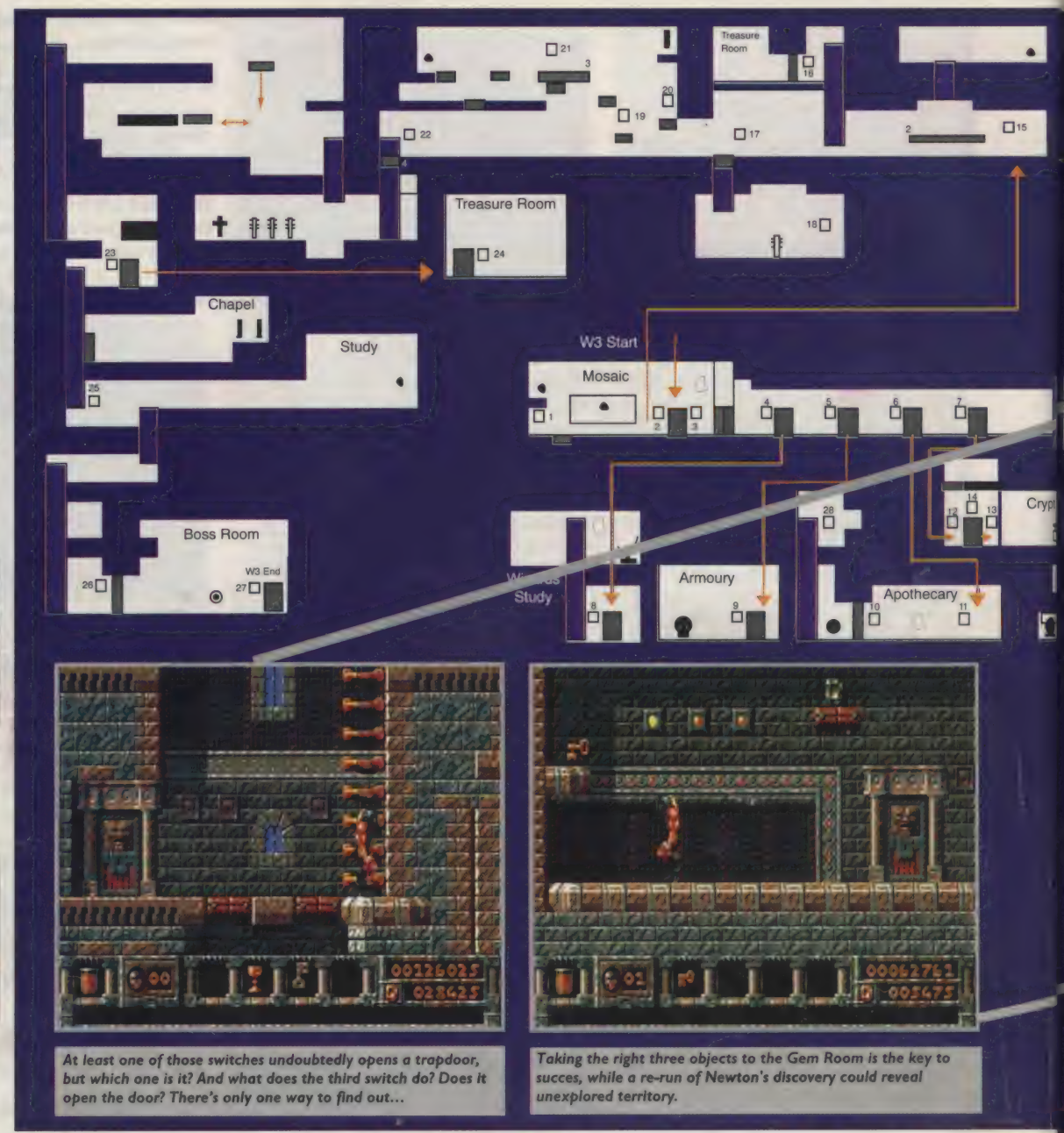


Thieves can be useful in certain situations – don't shoot them on sight.

The wide arc available at the start of the level proves useful for taking out the stone heads.

You'll only get to this room if you let a couple of thieves do their work first.

You'll have to be upwardly mobile if you want to retrieve an essential object.



At least one of those switches undoubtedly opens a trapdoor, but which one is it? And what does the third switch do? Does it open the door? There's only one way to find out...

Taking the right three objects to the Gem Room is the key to succes, while a re-run of Newton's discovery could reveal unexplored territory.

LEVEL TWO
WORLD ONE

The world key to exit world one is located in the gem room. It is situated on top of a platform, some distance above ground level. The key is much too high to reach by normal means.

The block that the key rests on may be lowered by bringing three gems to this room. You must bring the gems in the correct order, ice, fire then water. When lowered, collect the key and exit world one through the door by lever four.

Hidden puzzles

1. To get to the treasure room.
When you first start Level Two, walk to the right and press hidden switch one. This will open a trap door below. Walk left and kill the two centurions. If you still have more than one life, they will reveal a gold treasure chest key. Collecting this key will also trigger traps throughout this world.

Climb down into the chamber below the one you started in and walk right until a thief appears.

Leave the thief to jump up and steal the shield potion sitting behind the traps on the platform above. Now use the gold key to lure him back down and kill him to get the shield.

Climb up past the traps. Pull lever one to reveal a treasure key and a thief to collect it for you. Make sure your shield has run out before pulling the lever or it will kill the thief.

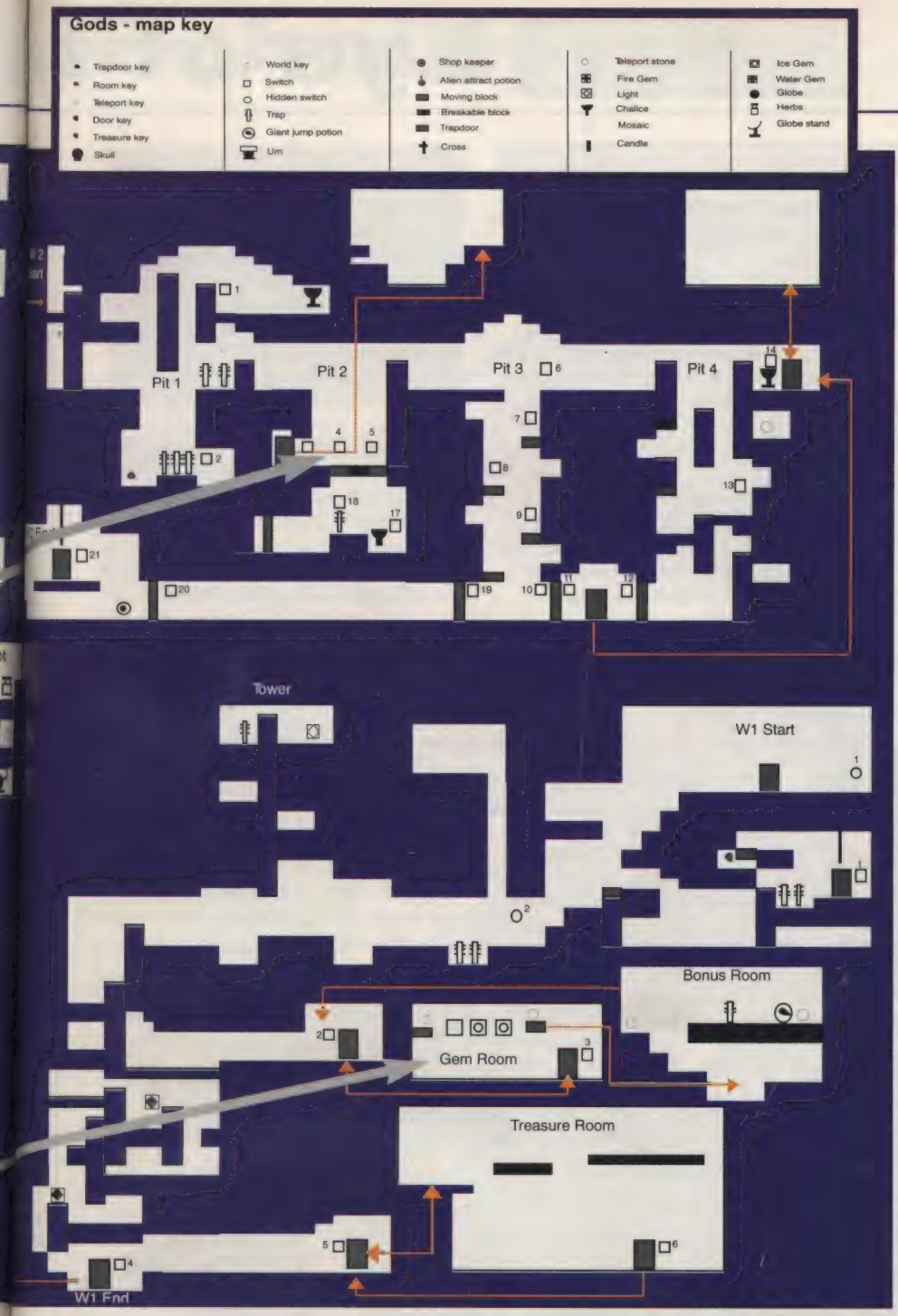
The treasure room is entered through the door to the right of lever five.

2. To enter the bonus room
Experiment with lever three. Make sure you have enough energy before entering.

WORLD TWO

The most direct route through the pits is as follows. Climb down the ladder to the platform where the narrow arc rests. It is usually better to ignore the narrow arc token if you already have a standard arc. Walk to the right hand edge of the platform and jump on to the ladder to your right. Jump on to the platform by lever one.

Press lever one to blow up the trap below. Climb back down and land on the platform below. Go down the ladder to the right. Get off at the first opening on your left. This is pit one. Blow up the traps by pulling lever two. Get the room key. Return to the ladder and climb back up to the top, exiting to your right. Keep walking along this platform to the right and drop off the edge. You are now in pit two. Walk



right and up the ladder. Walk right and jump over the gap.

Go right and down the next ladder and collect the teleport key. Go to lever six and pull it. This closes the first trap door in pit three.

Drop down. Pull levers seven, eight and nine to close each new trap door in turn, allowing you to progress to the bottom of pit three.

Open the two side doors to your right and go through the door facing you between levers 11 and 12. This will teleport you right to the top of pit four. Enter the door to the right of lever 15 and then collect the world key from the ship room.

To exit the world, climb down to the bottom of pit three and open the left hand door. The world exit door is along the corridor to your left

Hidden puzzles

To get to the treasure room.

There are three chalices lying around the pits. Take them to the ship room to receive a treasure room key. The treasure room is entered through the door to the left of lever three.

The Shop

Buy spears and power potions.

WORLD THREE

World three is split into two halves: the mosaic puzzle and the candle puzzle.

The mosaic puzzle

You start in the mosaic room. There are four pieces of mosaic which you must find and bring here. Pick up the first piece from the right hand side of the room and walk left to replace the first piece of mosaic. Pull lever one. Kill the two centurions revealed and collect the trap key. Reset lever one to reveal a moving block. Jump on to the moving block and pick up the door key.

Pull lever two to reveal the hidden door. Pull lever three to move block one. Reset lever two to open the door. Along this corridor are four rooms. These are the crypt, the apothecary, the wizard's study and the armoury. In these rooms are several objects, the globe, the skull, and the jar of herbs.

To find the missing three pieces of the mosaic, take the skull to the crypt, take the globe to the wizard's study and take the jar of herbs to the apothecary. The quickest route is, armoury, crypt, apothecary, wizard's study. Return all three pieces of mosaic to the mosaic room and a teleport stone will appear. The teleport stone will take you to the second part of World Three.

The candle puzzle.

Walk left, killing all monsters, until a trap key is revealed. Return to lever 15. Pull lever 15 and moving block two will rise from the floor. Jump on to the moving block and go up the ladder. Climb up the ladder and kill the wall monster to reveal a spear token. Pick up the trap key and climb back down the ladder. Walk left to lever 17 and pull it.

Climb down the ladder. Walk right. Jump over the trap and pull lever 18. This closes the trapdoor underneath lever 19. Climb back up and jump on to the trapdoor underneath lever 19. Use levers 19 and 20 to close trapdoors and make your way up. Collect the trap key on the left.

Jump on to moving block three and ride it towards the right. Jump up on to the ledge and retrieve the candle.

Go to lever 22 and pull it to move block four and climb down through the opening revealed. Make your way to the Study. The candle reveals the door key here. Go to lever 26 and pull it to gain entrance to the dragon's lair.

Hidden puzzles

1. To get the gold cross

Reset levers 19, 20 and 21. This will destroy the traps which prevent you from reaching the gold cross. The gold cross is very useful if taken to the right place.

The dragon

Alternately duck and shoot to kill the dragon. Don't force him too far over to the right or, when he dies, the treasure revealed will drop off the bottom of the screen and be lost.

The shop

During the first world of Level 3 you will almost certainly have to pick up a mace which will cancel your spears. Sell the spears now by buying one throwing star. Spend your money on fireballs and save the rest to spend in the next shop.

QED

Eye of th

Our tips for Eye Of the Beholder II in Issue 5 left you on the point of entry to level four. For those of you who can stand the suspense no longer, Robin Matthews now delves the further depths of SSI's deadly sequel.

One way ticket

Having cleaned up the heavies in the northern part of level -3 using hit and run tactics, you should now have the relevant keys to open up the Easterly section. Pay attention to your characters' observations and eventually, by banging your head against the wall, all will be revealed.

Make sure you rest your party fully and *save the game*, as within a short time of stepping on level -4 you'll be unable to retrace your steps for quite a while and, worse still, *you cannot rest!*

Level -4 is not too bad as regards nasties, but watch out for those gelatinous cubes as you may 'lose' items to them. It's best to restore a previously saved game if this happens.

All in a spin

Items are fairly sparse and the central section will turn you inside-out. There is a button on one of the corridors joining the central complex which will solve this.

The Southerly part of level -4 can only be sorted once you have recovered certain items from level -5. This is a very tough level with your party being poisoned and not being able to rest to relearn spells. Level -5 is only accessed via an illusory wall in the West wall and is best solved by making a series of reconnaissance trips to initially map the level.

One of the horns is also down in the Southern reaches of level -5, together with some important keys. Basically raid this level for all it's worth and then return to level -4.

Under pressure

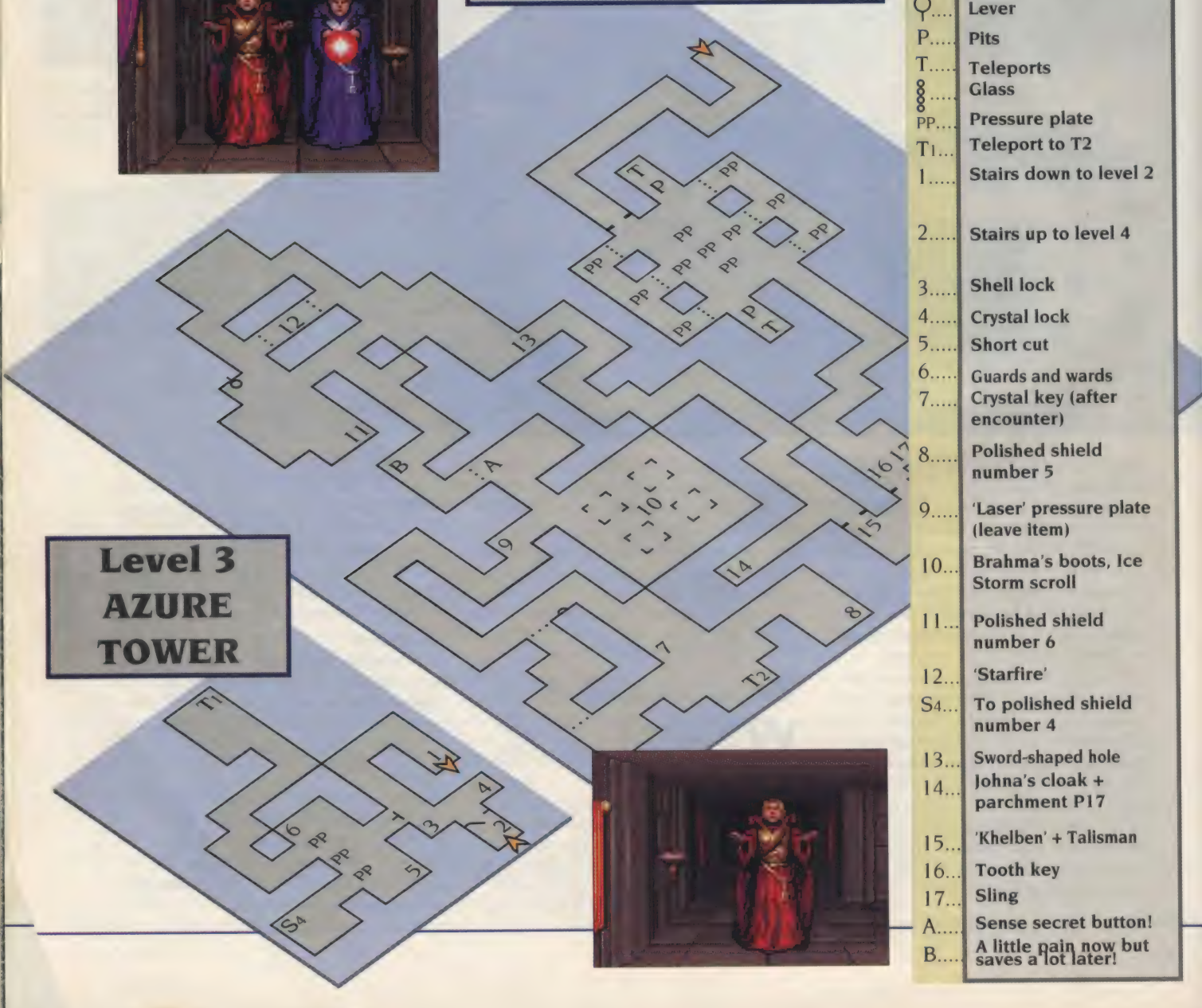
The nine pressure plates cause some real grief, but if your designs are simple you'll get there: a very useful tip is not to put an item on the last plate. This allows you to step on and off the plate, thereby opening and shutting the door. In this way you can control the flow of heavies coming from behind the door.

Take your time in this part of the world and all your problems will be solved, plus a third horn. There will in fact be two ways for you to leave this level. One is by the portal and the other is via a 'back staircase': this route should also be used to secure the final part of your ensemble.

The three towers

Securing and using the four horns (in the right place, you art lovers) finishes

Level 3



Level 3 AZURE TOWER

KEY

⊣....	Illusionary wall
⚲....	Lever
P.....	Pits
T.....	Teleports
⛓.....	Glass
PP....	Pressure plate
T1...	Teleport to T2
1.....	Stairs down to level 2
2.....	Stairs up to level 4
3.....	Shell lock
4.....	Crystal lock
5.....	Short cut
6.....	Guards and wards
7.....	Crystal key (after encounter)
8.....	Polished shield number 5
9.....	'Laser' pressure plate (leave item)
10...	Brahma's boots, Ice Storm scroll
11...	Polished shield number 6
12...	'Starfire'
S4...	To polished shield number 4
13...	Sword-shaped hole
14...	Johna's cloak + parchment P17
15...	'Khelben' + Talisman
16...	Tooth key
17...	Sling
A.....	Sense secret button!
B.....	A little pain now but saves a lot later!

Level 5

KEY	
S.....	Marks of Deep Scratcher
E.....	Broken egg
1.....	Spider key
2.....	Darts
3.....	Dark Moon key
4.....	Sa Shull dagger
5.....	West Wind horn; Cure poison; Leather boots; Helmet; Plate mail; Long sword

the first chunk of Darkmoon. You will now have to tackle the three towers – Silver, Azure and Crimson. Currently you are less than half way through and will now have to solve each tower to gain access to the next. 'Tower' is possibly a misnomer as the levels are generally quite large and only consist of four to five stages each.

A silver lining?

The second level (one up from the temple) of the Silver Tower is a bit tricky, with the sequence of the power beams taking a little patience to work out. They are constant, and by trial and error you'll be able to cross (rough directions are, starting from the most easterly squares, go east a couple, south, east to the far wall, north a couple and then east). Once your reception party is taken out, a lever will actually turn the relevant beams off so you could return to a previously saved game knowing the route!

The mantis eggs in the north west corner should be cracked two by two, and don't forget to have a look at that far wall.

Level three is OK, but there is a fair sting in the tail – if you're having a problem with the levers and holes, the North East is last, but you'll need to be a real brick not to take the plunge.

Paying lip service

Level four contains a corridor with eight open mouths. Each mouth requires a particular item to satisfy its hunger. Once all the mouths have been fed, the door to the west will open up. One that may hold you up is the one that's 'tiny and red'. When you satisfy the mouth to the north, an earlier shut door in the south west corner will open and reveal what you require.

Level five is the hardest in this tower and you will need to refine the 'jig' to dispose of the beholders. Run down the first corridor, returning, if necessary, to bait the beholders. Then make them follow you to a wider area so that you can strike, move left, strike, move right, and so on. This technique will dispose of them cleanly. A good tip is to perfect a dual control technique, using the keyboard for movement and the mouse for combat.

Headbangers' heaven

There are large areas hidden by illusory walls, which means you will literally have to go wall-banging to achieve results. In one of these areas you must find the beholder which is stuck in the ceiling. Don't bother pitying it, just attack and then raise your sights. There is an object here that is critical to your progression.

Next you need to get to an area which, as the crow flies, is south of the 'beholder in the ceiling' room. To get there you need to go round in a loop, north, west, south and then fiddle about to go generally east. There are swivel squares, so watch your compass, but, when you do get to just about south of the above room, keep an eye out for buttons in walls.

Now, a very important point: *do not* enter this sequence unless you have found the crystal hammer. If you have followed the advice above, you will come across it. If you have not found it, once you enter this sequence, you cannot trace your tracks *and really will have to revert to a saved game before this level!*

So, if you do have the hammer, press the button and take on the beholders. Lure out the initial little so-and-so, but, for the latter nest of them, the best approach seems to be run straight through the middle of them, then turn 180 degrees and 'jig and wack' as hard as you can. The sequence may take a little practising but you will complete it with the party intact.

You now have the vehicle to leave this tower and gain the key to the second, the Azure Tower.

The Azure Tower

The second of the three towers is accessed by entering the 'mouth door' on level +1 of the Temple. By completing the Silver Tower you may become worthy – check your hands to see if you've made the mark!

The main 'quest' of the second tower is to find the six 'polished shields'. The tower is of comparable size to the Silver Tower but has rather more puzzles and combat.

Upon entering the tower you must move the odd wall or two to reveal the stairs up to level two. This level will come to a crossroads where a careful visit Westwards will result in the first shield. Return to the crossroads and go South to reach level three.

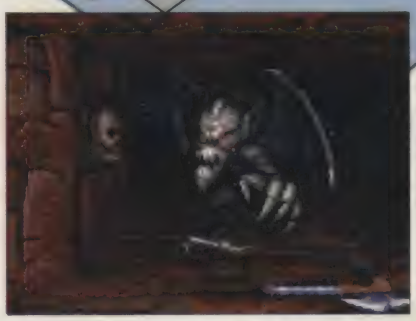
This is a biggie and will take some time to conquer. To progress on this level you will need to dispel some magic walls and collect gems of the heart, the soul and the body.

Bite the Bulletes

This gives access to the second part of level three which goes to both the west and the east. The westerly section is tough. Push a button and wait for the right moment to cross, then really use some leverage and perseverance to clear out the Bulletes. When you are given the non-magic challenge, take up the gauntlet. Make sure you drop all the items requested,

Level 5 SILVER TOWER

KEY	
┤.....	Illusionary walls
PP.....	Pressure plate
B.....	Beholder encounter
•.....	Keyholes
SS.....	Swivel square
1.....	A test of vision; it may change without warning
2.....	Sprite & Beholder
3.....	Chain mail, rations & a red ring
4.....	You are not children of Darkmoon, all invaders must be destroyed – the Guardians of the Tests will dispense with you presently
5.....	Marble pedestal. Press to return to ground level with 'Mark of Darkmoon' which allows entry to 'Mouth Door' & level +1
6.....	Shelter from all
7.....	Dagger & femur
8.....	In case of emergency, press button
9.....	Fierce wind down
10....	Halbard, shield & crystal hammer
11....	Dagger, staff & leather boots
12....	Rotten food & bone
13....	Mace & Fireball scroll
14....	Dragon skin armour
15....	Wand (Dispels magic)



including any spare spell books and so on. The reward is a 'key' later on, and you should also find a shell and crimson key in this Easterly portion.

On the other side of level three there is a down and down and up problem together with a shifty little poser. Get close, then turn 90 degrees and throw away some junk. Your 'key' now comes in handy but it may also be useful later so don't leave it behind. By now you should have shields two and three.

Short cuts and guards and wards

Level four is not via the two lock door, but through a wall before the locks. One way will give you shield four and the other will teleport you to the main part of this level. Two tips here are to use the Wall of Force spell on the guards; you can take them out at your leisure. The room to the right has a hidden passage which will save you from having to use one key.

Take heed of 'a little pain', as that alcove is the place to wait to waste the problems! All is plain sailing, have a smashing time, but is this really your pal?

Onwards anyway to what is probably the nicest puzzle in the game; not to be given away, but that's a clue anyway!

A tip here, when you solve the room with pads and glass, save the game since it seems the pit room sequence that follows may be randomised. Shields five and six should complete the collection.

You should have the two keys you need and level five is where to go.

Medusa madness

Possibly the single hardest level of the game. You need to use the six polished shields to get into the main portion. In here there are sliding walls, swivels and so on. You need to get to a corridor that starts a couple of squares North of where you enter this level. To do this you'll need to go North and then West, South, West, and so on, picking up a tooth key as you go.

The long corridor contains a swivel, so watch your compass, and you then find the Medusas' lair. Another nice puzzler here is to trap Medusas on each of the plates. Magic is the answer to keep their attention, and doing the southerly square last is the best idea.

Success (and watch it, loose Medusas appear intelligent and will free their imprisoned pals) opens up the locked door to another section.

Take your time in the room with skeletons and the final part of this level will

open up. Don't worry about the consequences of putting your foot in it, even though you'll get a frosty reception. Warm up the party to lose your hosts and then you should have the three parts in the talon contest.

The Crimson Tower

This is the last of the towers and the smallest. The entrance is on level +1 of the Temple, and you'll need the red key and the three parts of Talon. Clear the lower level first and then go up. Watch for swivels, and being on the button may be a good idea.

If you've got this far it would be wrong to give too much away about the final tower, although certain opponents appear 'mind-blowing' and perhaps should be ignored.

The final sequence is really the culmination of all the combat techniques you've picked up, and in fairness may not be everyone's potion of tea. The best and last advice is, perhaps, not to be cornered and not to keep your back to the wall!

HELP!
Lost Souls

PRINCE OF PERSIA
Paul 'AKKKMAN' Noble is back yet again, only this time he needs help. Can anybody tell him how to get past his shadow in level 12?

SPACE QUEST II
Thame's own Billy J has been well and truly swamped by Space Quest II. Can anybody help him back to firmer ground?

KING'S QUEST III
Jane Eaglen of St Albans has climbed down the cliff face, having successfully escaped the abominable snowman, but cannot get on the path at the right to exit the screen, and would appreciate some help.

COUNTDOWN
Paul Freeman, who resides in Plymouth, needs delivering from frustration. He knows that there is a doorway in the stone in the torture room, but he can't figure out how to open it. Can you rescue him?

MANIAC MANSION
Can anyone tell Leeds chap, Soroush Biglari, the code for the steel security door before he has a meltdown?

HELP!
Good Samaritans

XENON
Paul 'AKKKMAN' Noble is back (for the last time this issue, I promise), with help for Mark Butler, from Swansea (Issue 5). To kill the first sentinel, shoot it repeatedly in the small gap at the front. The best method is to collect as many balls as possible and leave them in the middle to fire up the middle while the sentinel moves up and down the screen. Paul also suggests, after killing the sentinel, you get side shots and avoid collecting the 'G' and 'W' tokens. The second sentinel is killed in the same way as the first, but it follows an anti-clockwise route, ducking down the middle during every loop.

KING'S QUEST III
Jane Eaglen, a regal lass from St. Albans, rides to the rescue of James Turner from Norwich (Issue 5) with these helpful hints. The magic wand is in the cabinet in the wizard's study, but you need the key, which is on top of the wardrobe in his bedroom, to open it. The wizard will only kill you if you are carrying something you shouldn't be. When he says he is going on a journey, or to bed, you have 25 minutes before he gets back. Hide the things you have collected under his bed

POLICE QUEST 3
Waleed Rizk from Arkley was having a little trouble solving crime (Issue 5), but Heysham's Darren Lang can clear the matter up. Make the fifth point of your pentagram lie between the eighth and ninth on Palm Street. As soon as this happens, a message box appears and tells you so. If you are still having problems, place the criminal locations on the actual streets on the map so that the third and fourth crimes make a perfect horizontal line across Rose.

HELPLINES

If you are having problems with games published by any of the companies listed below, then you can phone these helplines for assistance. Please only phone during the hours listed. If there are no times listed, then the helpline operates during normal office hours.

Domark: 081-780 2224 From 1.30pm to 4.30pm
Electronic Arts: 0753 549442
Entertainment International: 0268 541212
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US Gold: 0898 442025 (SSI: Hillsfar, Dragons Of Flame, Heroes of the Lance)
0898 442026 (SSI: Curse of the Azure Bonds, Pool of Radiance, Champions of Krynn)
0898 442030 (SSI: Buck Rogers, Seceret of the Silver Blades, Eye of the Beholder)
0839 654284 (Delphine)
0839 654123 (Lucasfilm)
Virgin Games: 081-960 2255 Ext. 258

Please note that US Gold's helplines are charged at 34p per minute off-peak and 45p per minute peak. If you are under 18 you must get permission, before you phone, from whoever pays the phone bills.

GAMES FOR GRABS

In an unbelievable fit of generosity, PC Review is now offering a complete game free for every tip, or piece of help, that we publish. Unfortunately we can't supply specific games but you can be sure that you will receive a recent hot release for the PC. Send your work to QED, PC Review, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU.

Don't forget to include your name, address, and size of disk drive.

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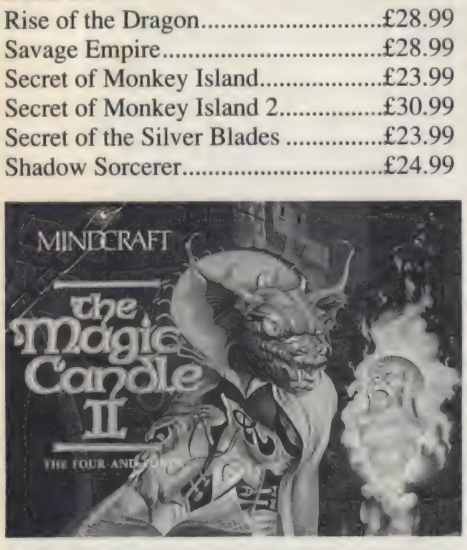

Superb depth of role - playing in Magic Candle 2. Features huge playing area and a wide variety of skills, spells and weapons

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"The Amstrad PC5286 Games Pack certainly scores in terms of size, packing all the basic components you'll need into a compact stick-it-almost-anywhere unit"

"What's the secret? Has Bullfrog simply been lucky with games beginning with the letter 'P', or is there something more dynamic lurking here?"

"Do not even think of buying a machine below a 286, and, if possible, buy a 386SX or 386. Pc games are increasingly being written to run optimally on a 386"

"A virus isn't anything special. The first version of Jerusalem had a bug in it; the Stupid virus often doesn't infect PCs properly because it's so badly written"

"You can, of course, make up your own multimedia system by adding to your own equipment or specifying it when you buy your computer"

"The combination of demos and information instantly available on the Windows screen means that you may never need to bother with the manual"

ISSUE 1
Amstrad 5286 Games Pack reviewed; Civilization; Kid Pix; Tecnoplus CD-ROM drive; Tips for Eye of the Beholder, Heart of China; Top 100 Classic Games supplement (pt 1).

On disk: Faces, Blues Brothers, Music Maestro, Jokeware.

ISSUE 2
Bullfrog profile; PC gadgets; First Steps in MS-DOS; Readers Top 50; Ultima VII, Patton Strikes Back, Mig 29M Super Fulcrum, Pro Tennis Tour 2, Police Quest 3; Readers' Top 50 games; More tips for Eye of the Beholder, Heart of China.

On disk: Powermonger, Pit-fighter, Sleuth, Typing Tutor.

ISSUE 3
No-nonsense guide to buying a PC; First Steps – fitting a hard disk; Electronic Arts On the Spot; Secret of Monkey Island 2, Powermonger, Cadaver, Bard's Tale Construction Set; Tips for Savage Empire, Immortal.

On disk: Lemmings, Gods, Gallery.

ISSUE 4
Protect yourself from viruses; First Steps – MS-DOS; Miracle keyboard; Guest on CD-ROM; Falcon 3, EOTB 2, Chessmaster 3000, Gods, Advantage Tennis; Tips for Conquests of the Longbow and Might & Magic III; Top 100 Classic Games Supplement (pt 2)

On disk: Fingerpaint, Moraff's Superblast, Gallery.

ISSUE 5
CD-ROM – the future for games?; First Steps – fitting a soundboard; Darkseed; Midwinter II: Flames of Freedom; Shuttle; Twilight 2000; Thunderhawk; Tips for Eye of the Beholder II.

On disk: Supaplex, Hugo's House of Horrors, Gallery

ISSUE 6
Windows: freedom from the DOS prompt; First Steps – upgrading to VGA and beyond; chess machines and PC chess programs; On the Spot: US Gold; Cruise for a Corpse; Star Trek; WC2 on CD-ROM; Tips for Longbow and Gods.

On disk: Darkseed, Blox, Gallery

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Cover disk

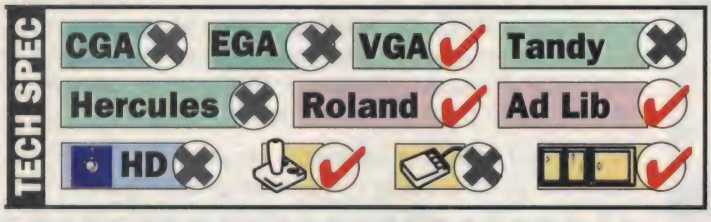
Another World is easily the most impressive animated game to appear on the PC. Check it out for yourself on this month's disk. You'll also find a complete copy of one of the most powerful personal organisers we've come across. Now there's no excuse for missing a copy of your favourite computer magazine.

Another World

If you think you've seen the ultimate in computer animation, think again. French software house Delphine has come up with a new system of animation using polygons, which results in the most fluid and lifelike motion yet seen in an action adventure game. This system makes even animation mileposts like Prince of Persia pale into insignificance. Check out page 72 for a complete review of this latest creation of Eric Chahi, the man behind Future Wars.

This demo contains the complete, stunning intro sequence and the first level of the game. On starting the demo, the intro sequence will play automatically and then repeat itself. To end the demo, press ESC. To play the first level of the game, press F1.

Your objective is simply to keep young scientist Lester alive as long as possible in a strange world. He will encounter dangers at every turn and must adapt to meet each one of them. You should



How to load the programs

Those who are experienced PC users should check the quick installation guide below. If you're unsure how to proceed, read through the step by step instructions in this panel.

Quick installation guide

Put the PC Review cover disk into your floppy disk drive and log on to it. Type

```
Front [Enter]
```

to start the menu and follow the on-screen prompts. When the program(s) have installed, log on to the relevant directory, and type the following to start the programs.

Another World:
`AWDEMO [Enter]`

Time Lord:
`Install [Enter]`

to complete the installation, then

`TL [Enter]`

to start it.

Gallery:
`Show [Enter]`

Step by step instructions

1 **Put your PC Review cover disk into your floppy disk drive.**

2 **Log on to that drive by typing**

`A: [Enter]`

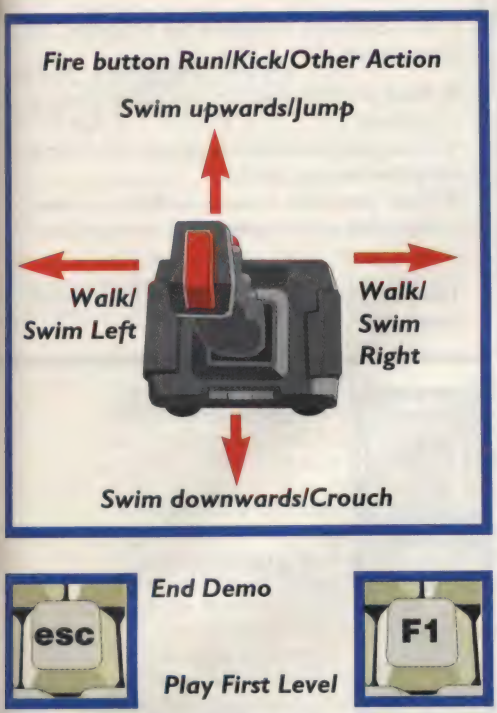
if your floppy drive is drive b:, substitute `b:` for `a:` in the examples.

3 **Type**

`Front [Enter]`

assume that most things you encounter are deadly.

The way Lester responds to joystick movements will change depending on the situation he is in. If, for example, you are in water, moving the joystick down will make Lester swim deeper, but while he is on land it will make him crouch. You'll have to experiment to find out what actions happen at each stage of the demo. If you die, just press F1 to start again from the beginning of the demo.



Time Lord

The Filofax may not be the in thing any more, having been dropped some time ago, by whatever the follow-up to a yuppie is, in favour of those handy little electronic things that lose all your addresses when the batteries fail, but this complete personal organiser is something no self-respecting PC owner should be seen without.

Time Lord is a sophisticated organiser and scheduler which offers many advanced features that are not available with an ordinary paper organiser. It is intended to be used as a tool for controlling your time more efficiently. All your business and personal contacts can be stored and referenced in a variety of ways. Notes of phone calls or other contacts can be stored and linked in with particular records in a type of "Rolodex" name and address book. The various desktop accessories like Time Planner, To Do List, and so on are shown in the accessories sub-menu off the main menu.

Before you can use Time Lord you must run a second installation program to set up the program properly. To do this, enter the directory in which you have installed Time Lord and type:

```
INSTALL [Enter]
```

A menu will appear allowing you to install the program to the same or a different directory, to check your system configuration, or to read the installation notes. Just press the key corresponding to your choice. The archived files will then be decompacted to either the same directory or another directory, depending on your selection. Once they have decompacted the installation program will make certain changes to your CONFIG.SYS and AUTOEXEC.BAT files if you wish it to. These changes are to ensure that Time Lord runs correctly.

Operating the program

Time Lord is a sophisticated and powerful product and to get the most out of it you should read the text file MANUAL.DOC which contains full instructions. The file can be read by typing:

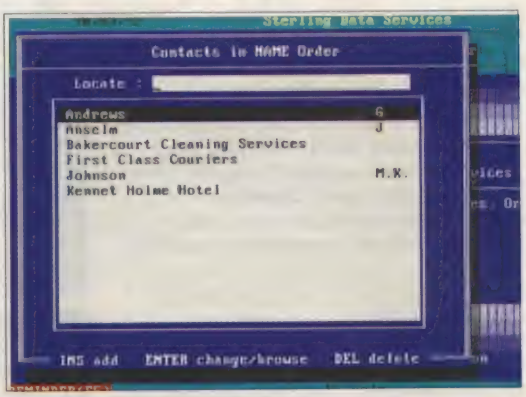
```
TYPE MANUAL.DOC | MORE [Enter]
```

and pressing a key after you've read each page. If you have a printer, type:

```
COPY MANUAL.DOC PRN [Enter]
```

to print it.

Before you run Time Lord for



to start the cover disk menu program.

4 **Use either a mouse or the cursor keys to select the program you wish to install. With a mouse, click on the bullet next to the appropriate program. With cursor keys, move the pointer to the bullet and press Enter.**

5 **Taking Another World as an example, you should now see an on-screen message saying**

```
The program will be decompacted to C:\WORLD. Is this OK? (Y/N)
```

6 **If this is OK, ie, you want to install Another World to your hard disk C:, and you have no other directories called WORLD, press** `Y` **and then Enter.**

7 **If you are installing to another disk, or you wish to give the directory a different name, simply press** `N [Enter]`**, backspace over C:\WORLD and retype your preferred destination, eg,**

```
B:\ANOTHER [Enter]
```

8 **The program should automatically install, finishing with the words All done!**

9 **To play the cover programs, log on to the correct drive and directory (if you did change the drive and directory names, don't forget where you put them!):**

```
C: [Enter]
CD WORLD [Enter]
```

will take you to the WORLD directory on drive C:

10 **Type the following commands to start the programs:**

```
AWDEMO [Enter]
```

to play Another World

```
INSTALL [Enter]
```

to complete the installation of Time Lord and then

```
TL [Enter]
```

to start it.

`SHOW [Enter]` **to view the Gallery.**

the first time, you should reset your machine to make sure that nay changes to the CONFIG.SYS or AUTOEXEC.BAT files take effect.

This software is completely menu driven and easy to operate. Most of the manual is also available as context-sensitive help screens. Just press F1 any time you are unsure what to do.

Quick Start

Here we describe how to use the basic functions of Time Lord so you can quickly get started. The software is completely menu driven with prompts on every screen so it is easy to use. To start the program type TL and press ENTER.

Choose Option 1 from the Edit Contacts menu and a pick list of contacts appears. INS will add a record, ENTER will pick one for amending and DEL will delete. (INS refers to the insert key under the numeric keypad on your keyboard)

Pressing F1 at each stage will explain what is happening. A feature of the data entry screen is that speed is improved by the use of picklists for four of the fields which pop-up when required.

There is a screen saver feature which ensures that if the program is left for more than 10 minutes without a key being touched then your monitor's screen will be blanked out. The screen image will be restored as soon as any key is pressed.

Updating Records

The number of databases and records is limited only by the size of your hard disk.
Keys used on the update form:
CTRL and ENTER Save any changes made and return
CTRL and ESC Leave the update form without saving changes
ENTER Move on to the net field
ESC Back up a field (exits if on first field)
ALT and N View/create notes
ALT and A View/create appointments and associated notes
ALT and D Dial one of the phone numbers
ALT and F Total/average the user defined fields
F2-F3 Calendar/calculator
F4 Appointments/time planner
F5 Reminders
F6 Diary
F7 To do list
F8 Document database
F9 Summary of weekly activity

Pressing PgUp or PgDn in the update form will take you into browse mode. Any changes should be saved first using CTRL and ENTER.

Record number is a unique ID supplied by the program for each record. Category code is selected from a pick-list. If a category you enter cannot be found you can create it in the Utilities section.

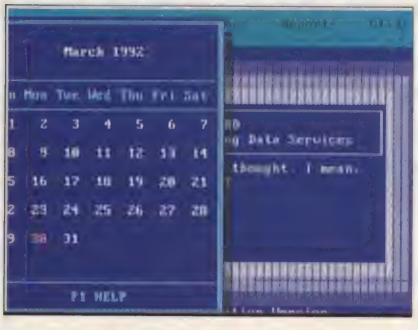
Searches

Text searches can be carried out on all the information stored – such as notes, diary pages, reminders and so on. Case is ignored. Diary pages are stored on disk in encrypted form for confidentiality.

Appointment scheduler

The first step is to choose a particular individual's schedule from the picklist presented. Names can be added/removed from this list in the Supporting Files section.

Next you will be shown a screen with every Sunday in the year marked. These dates are taken as the first day of the week and by moving the cursor and pressing ENTER you will be



Standard keys

Add a record

Change a record

Delete record (confirmation will be required)

Finish

Help

Calculator

Appointments

Calendar

Reminders

Diary

To do list

Document database

Summary

TROUBL

If you're having problems, check our trouble-shooting guide below:

I get the message 'Cannot run in Mono'.

● The menu program will not run on mono machines. If there are mono compatible programs on the disk, you will have to install them manually as outlined on page 17.

When I try to start the menu program I get no response or the message 'Bad Command'

● Have you made the drive containing the cove disk the current one?
● Is the disk properly inserted with the drive door closed?

I have correctly installed the program, but it won't work.

● Have you followed the correct loading procedure?
● Have you made the correct directory and drive the current one?
● If the game was installed to floppy, is the correct disk properly inserted and the drive door closed?

The program I have selected won't install properly.

This disk has been checked for all known viruses. However, PC Review cannot accept responsibility for any consequences that may arise from using the disk or the programs on it.

SHOOTING

- Is there a blank, formatted disk in the drive you have selected, and is the drive door closed?
- Is there enough room on the disk you have selected. You should only install programs to blank disks (one for each program you install). If installing to a hard drive, as a general rule, you should have at least two megabytes of free space for each month's cover disk. Sometimes the programs will not fit on to a 360K disk, even if it is completely blank.

HELPLINE

If you still have problems then please phone our helpline number below before returning your disks:

DISK HELPLINE: (0443) 693233

The helpline operates between 10.30 am and 12.30 pm weekdays. If possible, please have your computer operating and your cover disk ready when you phone the helpline. If your phone is not near the computer then please note down as much information about the fault as you can and have pen and paper handy before you call.

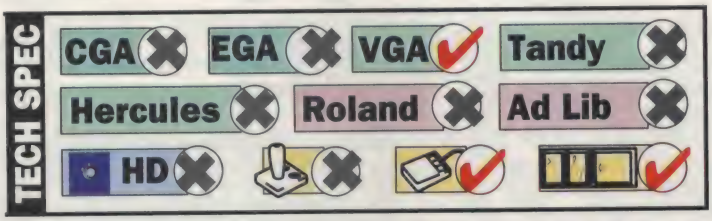
Gallery

Gallery (3.5" disks only)

Despite having a disk jam packed with goodies this month, we've still managed to squeeze on a preview pic of the forthcoming sequel to Red Baron, Aces Of The Pacific. This Dynamix game promises to be their best yet and features state of the art flight simulation software technology..

Some of the stunning features you can expect to see in Aces of the Pacific are true texture mapping on some 3D surfaces, a playing area that covers the whole of the Pacific ocean, and a wider range of missions than those in Red Baron.

We'll be bringing you an in-depth review within the next couple of issues so you can judge for yourself just how good Dynamix' latest work is...



shown that week. ALT and F will show weekly summaries of time used and number of appointments.

If there are no appointments for the week the "Add an Appointment" screen will appear. Press ESC if this is not needed. A check will be made to see if an appointment overlaps with an existing one. Appointments can be linked with a particular prospect (press F10 for a picklist of prospects) or left blank if 'general', such as a visit to the doctor.

ALT and A in Edit Contacts will show a history of the prospect's appointments. F6 prints out a range of appointments, handy for carrying around with you.

F10 shows a graph of the free time for that week.

At the end of a day/week it is a good idea to go back and fill in the appointment notes so that a permanent record is available of what happened at the meeting.

On entry forms (as when entering name and address details):

ENTER Move to next field
CTRL and ENTER Save all changes and finish
ESC Back up a field (quit if on first field)
CTRL and ESC Abandon any changes and finish

Document Database

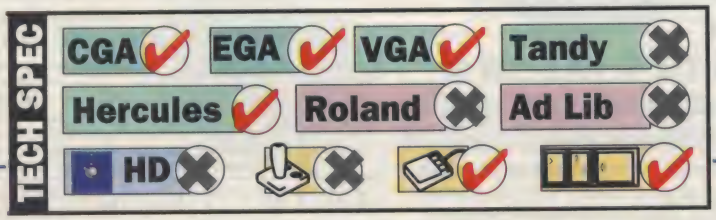
Important text files that you have in various locations on your hard disk can be conveniently brought together in the Document Database section, which is accessed by pressing F8 in most parts of the program.

To view, search, or bookmark a text file press F10 while the cursor is on the desired file.

Registration

If you find Time Lord useful, you can register and gain an updated version with additional utilities. To register send £29 to:

Sterling Data Services
2 Fairford Road
Tilehurst
Reading
RG3 6QB



FAULTY DISK?

PC Review's cover disks are checked and validated, but if you have reason to believe yours is faulty, pop the disk(s) in a jiffy bag with an self-addressed envelope and postage to the value of 28p (55p from overseas) for return of the new disk, and the form below (filled in) and send the package to the following address:

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Unit 3, Merthyr Industrial Estate
Pentrebach
Merthyr Tydfil
Mid Glamorgan
CF48 4DR

Please DO NOT send the disk back to PC Review – we don't hold stocks of spare disks.

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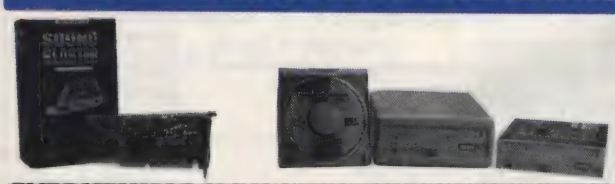

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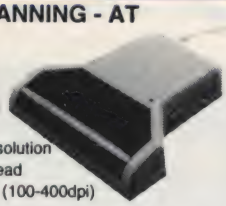

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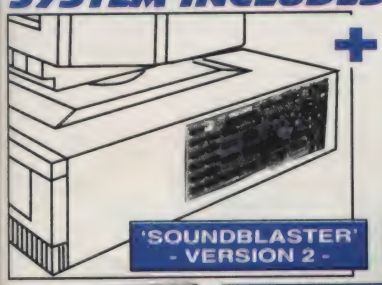

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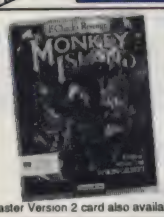

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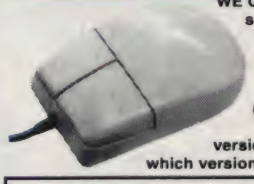

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No doubt you've already read our complete guide to flight simulators on page 36, but have you ever wanted to try the real thing? In order to celebrate its hugely successful Gunship 2000 multi-role helicopter simulator, MicroProse is offering one lucky reader the chance to win a free lesson in the art of helicopter piloting. What's more, you don't even need any experience!

You and a guest will start your day at MicroProse's plush offices in Tetbury, where you'll be taken through all of the upcoming products from the illustrious firm, followed by lunch and a ride out to the nearby aerodrome. There you'll be handed over to a qualified instructor who will take you through the mechanics of getting the Hughes 300 up in the air, twice around the block and back on to the ground in time for tea.

The good news is that there's no age limit to this competition. If you can put one foot in front of the other, you can fly a helicopter. In actuality, providing you have logged a sufficient amount of flying time, you can take your test at the age of 17 and fly solo if you pass.

You can only start logging hours at 14 or above though, so if you pass this age limit you could log this lesson as legitimate flying time! That should

Rules

The flying lesson will be won by the first correct entry drawn at random after the closing date.
The next five correct entries will win the tickets and the T-shirts.
The following five entries will win the games and the T-shirts.
No entries received after the closing date will be considered.
Only ONE entry per person please. Multiple entries will be ignored.
Only official coupons or photocopies will be accepted. No hand drawn coupons please.
Employees of EMAP Images or MicroProse or relatives and acquaintances thereof are expressly forbidden from entering.
The editor's decision in all matters is final.

How To Enter

Pictured left are five of the helicopters featured in Gunship 2000. All you have to do is name them correctly. Put the picture letter in the appropriate box on the coupon and send it to:

Flying Lessons
PC Review
EMAP Images
Priory Court
30–32 Farringdon Lane
London EC1R 3AU

Make sure your entry reaches us by May 17, 1992 and we'll announce the winners in the July issue.

take you one step closer to earning your wings (or rotors, anyway).

But wait, there's more! Five lucky runners-up will each get themselves a free ticket to this years Air Tournament International at Boscombe Hill in June and an exclusive MicroProse T-shirt. The ATI is held every year to support the Royal Air Force Benevolent Fund and features a startling display of every kind of aircraft imaginable. For more information on the show, give the ATI hotline a call on 0891 122997. This is a recorded message, though, so calls will cost you 36p per minute cheap rate and 48p per minute at all other times. And if that wasn't enough for you, five third place entries will win themselves copies of Gunship 2000 and a T-shirt.

Flying Lessons

I think the pictures correspond to the following helicopters:

AH–64A Apache ☐
AH–1W SuperCobra ☐
OH–58D Kiowa Warrior ☐
UH–60K/L Blackhawk ☐
AH–6G Defender ☐

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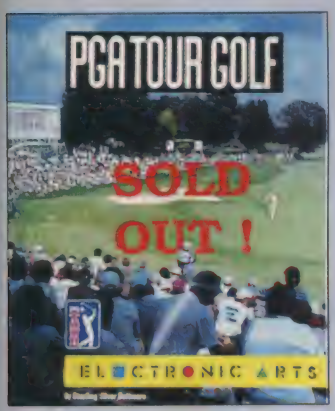
Mario Andretti's Racing Challenge
3.5"/5.35" - CGA, EGA, VGA

Battle Chess *3.5"/5.25" - CGA, EGA, VGA, Windows*

The Bard's Tale *3.5"/5.25" - CGA, EGA, VGA*

POPULOUS

Out of the darkness were born two nations, fanatical followers of their own beliefs, warriors by nature. Ultimately there can only be one survivor to claim victory over all! Design your own worlds and conquer them! Control the awesome power of nature and experience this classic, biggest selling 16 bit title ever!



PGA TOUR GOLF

PGA Tour Golf is the only computer game ever licensed by the US PGA. Panoramic fly-by shots and look-back view let you play real tournaments on real courses. Instant replay lets you relive great shots as you compete against 60 PGA pros!

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from the man who has flown with them all. Will you have the right stuff?

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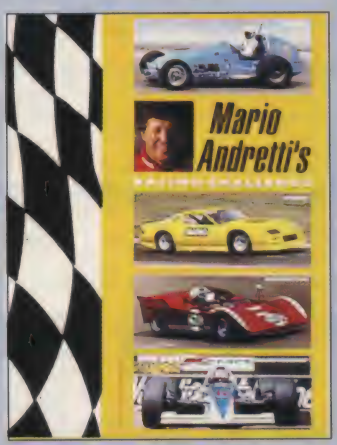

challenges in this brilliant professional racing simulation.

BATTLE CHESS

Battle Chess brings chess to life by combining a magnificent chess logic system with colourful and dramatic 3D animations and digitised sounds. Winner of the Software Publishers Association award for best graphics.

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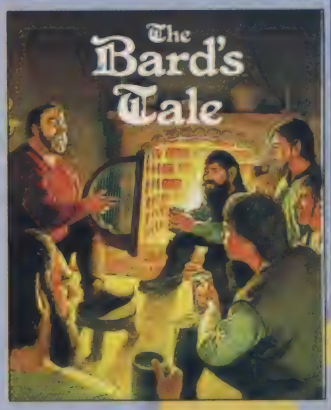

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Next month

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19 Easter Sunday	20 Easter Monday Bank Holiday	21	22	23 St George's Day	24	25
26	27	28	29	30		

MAY 1992

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
					1	2
3	4 May Day Bank Holiday	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25 Spring Bank Holiday	26	27	28	29	30
31						

May 15th

PC REVIEW ISSUE 8 GOES ON SALE

All-in-one games PCs

First there was Amstrad, with the 5286 Games Pack. Now the PC games bundle is everywhere. We'll review three current PCs ready configured for entertainment to see which is best value for your money.

Dark Seed: the review

If our Dark Seed demo on Issue 6's cover disk whetted your appetite for more, we've got the finished game lined up for the PC Review treatment.

Special 24-page supplement

Don't miss out on our next full colour supplement, free with PC Review: the definitive games atlas, packed with maps for your favourite titles.

Plus: the war gaming side of SSI; Buzz Alldrin is Coming Soon, a step-by-step guide to adding extra memory to your PC and a look at file management programs – how ot make your life with DOS that little bit easier.

Place an order with your newsagent now.

Contents subject to change.

PC review CLASSIC GAME

Guide

Classic action, classic thrills, classic games – brought to you exclusively in PC Review's new Classic Games Guide! Over the past few years there has been a massive increase in the number of software houses developing games for the PC in this country *and* the amount of products coming from the United States. The choice facing the lucky buyer is truly impressive!

Each month we will feature top quality PC games, covering all aspects of computer entertainment, from action to brain teasers, fantasy to sport, and flight simulations to strategy. Quite simply the very best your money can buy. And each month we will also take an in-depth look at a particular classic game.

This section of the magazine is not just a nostalgia trip, however. Classic games are being created all the time and they too will find a place here. So if you are a keen gamer or newcomer to the excitement of computer entertainment, there will always be something new for you to read each month. We are sure our Classic Games Guide will become an essential companion.

This guide is about buying games as well. If you see a game you like the look of, you will probably want to buy it. But where? How can you be sure it will be in stock? Don't worry. Take special note of PC Review's up-dated Dealer Directory.

The Dealer Directory lists nearly 40 of the country's top independent computer shops and, in conjunction with Centresoft, one of the UK's leading distributors of software, they have agreed to feature the games listed in this guide.

When you visit, look out for the PC Review Recommended logo – the guarantee of quality games and quality service.

The action starts now ...

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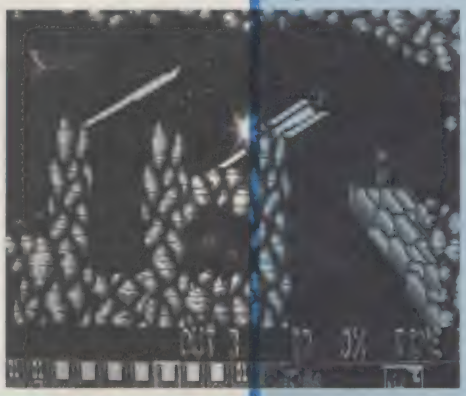
PC review

CLASSIC GAME OF THE MONTH LEMMINGS

from Psygnosis



We have done everything humanly possible to check the information in this guide. But prices do change, distribution switches from one company to another, even brand names can alter. While we will update the information regularly to take account of this, we cannot be held responsible for errors.

Anyone – suppliers, publishers or readers – who knows of any products suitable for inclusion, but which have been mysteriously omitted, can write in with details – please do not telephone – to PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

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PC review

CLASSIC GAME OF THE MONTH

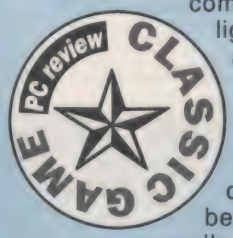
Lemmings

Just as you refer to any type of vacuum cleaner as a 'Hoover', any small car as a 'Mini', any paracetamol tablet as an 'Aspirin' and any ballpoint pen as a 'Biro', one day all games which feature tiny, suicidal green-haired creatures will be known as a 'Lemmings'. Okay, so you've seen right through that argument – Lemmings is one of those games that's so unique that, no matter how hard anyone tries to cash in on its success or rip it off, there will never be anything like it again (except maybe Lemmings 2 of course!).

The very idea which inspires this game to the great heights it reaches (and subsequently jumps straight back off again) goes against the time-honoured tradition which says that computer games are all about killing people. Who would have thought that saving lives could be this much fun? (Although to be perfectly honest, there's hardly a more satisfying feeling known to man than the one which comes all over you when you hit the 'nuke' button and watch the little blighters disappear into multi-coloured smithereens.)

In essence, Lemmings is a very simple concept to get your head around: a stream of adorable (but stupid) creatures fall from a trapdoor and head off blindly towards their goal. The only trouble is that there are a number of obstacles and traps in their way which, not to put too fine a point on it, kill them. Using your skill and judgement (as they used to say in those competitions on the back of Cornflakes packets), it's up to you to prevent this from happening by endowing one or more of the chaps with a special skill (some can climb, some dig, some build bridges and so on) to overcome the obstruction.

But that's only in essence. In reality, this is one of the most imaginative, compulsive, frustrating and funny games that's ever seen the light of day. It's not just a matter of figuring out what action needs to be performed at any one point – once you've got that sorted out, you've still got to carry it out within the required time limit and without losing any of the little darlings along the way... which, as a test of coordination, is somewhere close to juggling a chainsaw, an egg and a bowling ball with one hand tied behind your back. No, actually, that description doesn't really go far enough.



Lemmings has become a classic for a number of reasons – the humour, the originality and the unequalled playability to name but three – but mostly because the 'learning curve' is so perfectly pitched: the feeling of satisfaction that hits you when you actually complete a level only lasts as long as it takes the next level to load – and then it's immediately 'once more into the breach dear friends' without so much as a pause to catch your breath.

It doesn't really matter if you only ever play flight simulators, or adventures are your thing, or if you're the sort of gameplayer who's impressed by 256-colour VGA and multi-layer parallax scrolling ... give Lemmings a try – you won't be disappointed. You may, however, lose your family, your job and everything else which you hold dear, but make no mistake ... it will have been well worth it.

Lemmings ■ Psygnosis
(051) 709 5755 ■ £34.99

ACTION

GOLDEN AXE
Virgin, £29.99
An unusually successful conversion (in PC terms) of a traditional hack and slash coin-op – Golden Axe offers a choice of male and female heroes, but it's still all just straightforward macho bloodletting really.

PRINCE OF PERSIA
Mirror Image, £9.99
The amazing animated characters are only eclipsed by the depth of the play. An extremely durable game, number four in our Readers' Top 50, and a genuine contender for the greatest action game ever.

IVAN IRON MAN STEWART'S SUPER OFF-ROAD RACER
Virgin, £29.99
It's high-speed, four-wheel-driven action all the way in yet another successful Virgin coin-op conversion. More multi-player fun than you can shake a gearstick at.

SPEEDBALL
Mirror Image, £9.99
Hectic and brutal futuristic sporting action from the Bitmap Brothers, with pinball, basketball and martial arts rolled into one great sucker punch. Only surpassed by ...

MUDS
Rainbow Arts, £24.99
A peculiar 'future sport', where two teams of astonishingly ugly monsters try to throw an SFA (Small Furry Animal) into a basket. A strong blend of sick humour, action and strategy. Highly entertaining in a strange sort of way.

VIRUS
Mirror Image, £9.99
A still-stunning 3D shoot 'em up (despite its advancing years), which rewards the time spent in mastering the controls with exhilarating and satisfying action.

RICK DANGEROUS 2
Mirror Image, £9.99
...As is this laugh-a-minute sequel, where the pint-sized hero once again has to negotiate his way through level after level of less than serious opposition. Pure platform-based arcade adventure over four levels packed with complex and testing puzzles. A hilarious masterpiece.

SPEEDBALL 2
Image Works, £30.99
You guessed it! A worthy sequel to the impressive original, featuring a larger play area, new rules, harder and faster action and a whole new management structure. The updated pitch allows for more violent plays plays. It appeals to sports fans as well as play tacticians.

XENON 2
Mirror Image, £9.99
Still the ultimate in straightforward shoot 'em ups, (above) featuring almost unlimited ship upgrades and a real difficulty curve. The Bitmaps' signature metallic graphics are used to particularly good effect.

INTERPHASE
Mirror Image, £9.99
A graphically impressive 'cyberpunk' 3D action adventure set inside a 'Big Brother' computer. Unusual and playable in equal parts.

SIMULATION (FLIGHT)

CHUCK YEAGER'S AIR COMBAT
Electronic Arts, £34.99
Electronic Arts makes a real bid for MicroProse's 'king of the sim' title with this multi-plane flight and fight extravaganza, played out above three wars and scenarios and named after the first man to fly faster than the speed of sound.

F-29 RETALIATOR
Ocean, £34.99
An impressive, if slightly simplistic, simulation debut from the movie tie-in specialist. Good speed, multiple missions and a choice of two experimental craft make this a good choice for those who value instant action over accuracy.
It also includes an option to play head-to-head with another human player via a modem. With the possible exception of Jetfighter, this has the easiest controls on any flight simulator. It's pure fun from the moment you take off.

F117A STEALTH FIGHTER
MicroProse, £39.99
Nothing less than the state of the art in both subject matter and programming technology, F117A features multiple radar-invisible missions over five theatres of war. Seeing is believing – an absolute must for serious flight fans.
Apparently this simulation caused quite a stir in military circ when it came out because of its accuracy. There are plenty of theatres of war in which to fly the craft, including Central Europe, the Middle East, Libya, Korea and Northern Cape, which vary in complexity and difficulty.

FALCON 3.0
Spectrum HoloByte, £49.99
Reviewed in PC Review Issue 4, Falcon 3.0 offers a strong action-based complement to MicroProse's F117A (see above). Beautifully presented, this simulation features head-to-head combat at the controls of the USAF's pride and joy, the F-16 Fighting Falcon. As good as they come.
Rated 9

GUNSHIP 2000
MicroProse, £39.99
A nice break from the usual fixed-wing action, Gunship 2000 is a strong progression from MicroProse's original (and highly popular) chopper simulation, with a strong

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SIMULATION (FLIGHT)

storyline built in. Highly recommended.

FLIGHT SIMULATOR v4.0
Microsoft, £44.95
An all-out 'simulator' as opposed to a 'simulation', version four offers precious little combat, but does offer the most realistic recreation of real flight that's possible to get from any home computer. The big Daddy of PC flight sims and a real learning experience.

KNIGHTS OF THE SKY
MicroProse, £40.86
Chocks away for a historical joyride over the trenches of World War I in France. What it inevitably lacks in speed, Knights of the Sky makes up for with tense and gripping dogfight action. A nice break from the usual array of F-birds.

LHX ATTACK CHOPPER
Electronic Arts, £39.99
Although it's now been superseded by MicroProse's Gunship 2000, LHX Attack Chopper still offers a mix of strong action, unusual gameplay (with unusual experimental aircraft) and a structure which works well enough for experts and amateurs alike. Control is simple yet comprehensive. It contains a wealth of gameplay options and three scenarios – set in Libya, Vietnam and Europe.

MiG-29 SUPER FULCRUM
Domark, £40.85
The sudden and unexpected end to the cold war allowed Western developers, game designers and programmers to check out and recreate a number of Soviet aircraft, the best result of which was this game, reviewed in Issue 2.
In keeping with these changes, the aim of this game is to maintain the new world order. As a member of a UN peace-keeping force you are sent to free an unnamed area of South America which has come under rebel domination.
Your goal is to knock out their headquarters. No easy task as the rebels themselves possess an impressive array of weaponry. Aircraft buffs will undoubtedly enjoy flying this less technology-heavy plane.
Rated 7

RED BARON
Dynamix, £39.99
It really needs a powerful PC to operate to its optimum ability, but once this is taken care of this is one of the most accurate and option-heavy simulations available. The most highly rated flight sim in our Readers' Top 50.

JETFIGHTER II
Velocity, £39.99
Concentrating on easily-accessible 'arcade-style' action rather than 'true'; simulation, Jetfighter II offers four aircraft, multiple enemies and 100 missions. Neat, polished, accessible and lavishly presented.

SECRET WEAPONS OF THE LUFTWAFFE
Lucasfilm, £40.99
Lucasfilm is a company which specialises in producing top-notch games in two distinct areas: animated graphic adventures (The Secret Of Monkey Island etc.) and historical flight sims, the best of which is this beauty, first reviewed in Issue 1. The premise of the game is what if the jet and rocket-powered weapons the Germans were working on in the dying days of the war came into general use and their effect on the outcome of the war. Extra missions disks are now available.
Rated 6

SIMULATION (DRIVING)

4D SPORTS DRIVING
Mindscape, £30.99
A hybrid of Domark's Hard Drivin' and Accolade's Test Drive games (more later), DSI's 3D racer is a one-on-one against an equally well equipped opponent. Comes complete with a course designer.

BILL ELLIOT'S NASCAR CHALLENGE
Mirrorsoft, £35.99
The trouble with North American Sports Car racing is that it all takes place on a circular course, which limits the game's variety. That aside, this is a good rendition of one of the fastest four-wheel activities there is. The game includes a host of options. You can choose cars, tracks, type of race – qualifying, apprentice or main event.

CRASH COURSE
Mirrorsoft, £30.64
One of many 'clones' of Tengen's superb Hard Drivin' coin-op (the arcade world's most realistic driving simulator), this one features five courses plus your own track editor.

INDIANAPOLIS 500
Electronic Arts, £24.99
Among the greatest simulations of any type available for the PC. You race against 32 other drivers in your bid for glory as the simulation takes you from initial practice, warm-up laps, qualifying heats and the big race itself.
Gasp in amazement at the realism ... then do it all again using one of the spectacular replay options. Unsurpassed.

HARD DRIVIN' 2 – DRIVE HARDER
Domark, £30.64
Not so much a sequel, as a second attempt at converting a difficult coin-op – and good thing too as this is far better than the original. A real challenge.

MARIO ANDRETTI'S RACING CHALLENGE
Electronic Arts, £24.99
Putting you at the wheel of everything from an F1

TEAM SUZUKI
Gremlin, £29.99

Reviewed in Issue 1, Team Suzuki is almost like a flight simulator on the ground – and just as difficult to get to grips with! You get the chance to ride three classes of mototbikes, a 125cc with six speed automatic gearbox, and 250cc and 500 cc bikes both with six speed manual gearboxes. The game features a TV camera option so you can see yourself race. Team Suzuki is difficult to master but well worth the trouble – especially for bike fans.
Rated 7

thunderbolt to a dirt-track buggy, MARC is as much fun as it is well executed. Only for users with faster processors though.

TEST DRIVE III – THE PASSION
Accolade, £30.64
The 'passion' in the title presumably refers to the way that owners feel about the luxury cars featured here including a top of the range Lambourghini. Apart from that, it's a standard 3D driving sim with a few nice bells and whistles thrown in for good measure.

SIMULATION (OTHER)

SILENT SERVICE 2
MicroProse, £35.75
Historically and technically accurate (right down to the profusion of unreliable torpedoes), SS2 takes quite a bit of mastering but it's worth every minute. Some of the combat may seem over simple but they do provide an engrossing tactical experience of being an American World War Two commander in the Pacific Ocean. It's got atmosphere in depth.

DAS BOOT
Three-Sixty, £35.99
An unusually coherent and playable mix of action and strategy, this U-boat sim may not be as comprehensive as Silent Service 2, but it's a sight more accessible. The set-up screen consists of choosing the difficulty levels, type of submarine and how realistic you want the simulation to be. There are no huge manuals to read and you can get straight down to the action with training missions. These allow you to quickly get to grips with your submarine and get some quick battle experience. Most combat elements are included such as torpedo runs and anti-aircraft gunnery

TEAM YANKEE
Empire, £35.75
Based on Harold Coyles's novel, this is a similar game to MicroProse's M1 Tank Platoon, and a little more complex strategically. This is mainly down to having to control four platoons simultaneously. Team Yankee is also distinguished by the use of bitmapped graphics for the 3D rather than filled polygons. This helps to give the game a more absorbing atmosphere than many other simulations. Watch out for its sequel, Pacific Islands, which is coming soon.

M1 TANK PLATOON
MicroProse, £40.86
A good tank simulation, made better by the fact that (as the name suggests), you take charge of a whole group of the metal beasts. There is a choice of engagements ranging between easy and hard, with optional enemy capabilities, from second line troops to the very best. Well structured and engrossing.

RAILROAD TYCOON
MicroProse, £35.75
A completely unique game – and not just for trainspotters or overgrown kids either. Take control of a fledgling railway in the heyday of steam and use your best business acumen to take it across an entire continent – wiping out, or buying up, the opposition on the way. This forerunner of the superb strategy game Civilization is definitely not to be missed.

STRATEGY WAR

COMMAND HQ
Microplay, £34.99
Similar in some ways to the popular board game Diplomacy, Command HQ puts the player in charge of everything the West's got in any one of three historical situations and one futuristic scenario set in 2023. The scenarios increase in complexity as the date progresses. For instance, you can start out with infantry, cruisers and subs in the early scenarios and end up with nuclear weapons, satellites and other high tech equipment in the later ones. Economics also plays a key role in the success of your war campaigns.

SUPREMACY
Virgin, £34.99
Two huge civilisations battle it out for a single star system. Attack planets and then exploit them for resources vital to the war effort.
Slick graphics and a more than user-friendly interface turn what's essentially a political power struggle into a hugely enjoyable mental workout – a most rewarding evening's entertainment.

HARPOON CHALLENGER PACK
Three-Sixty, £49.99
A good value package which comprises the highly-acclaimed naval simulator, plus its North Atlantic Convoy BattleSet – a must for serious naval strategists.

UMS II
Rainbird, £40.86
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FANTASY RPG

BUCK ROGERS
SSI, £34.99
An unusual, highly successful, computer appearance for one of the cinema's early heroes. A conversion of a TSR board game, this has all the usual SSI hallmarks: strong presentation, atmosphere and depth. It uses a variant of the AD&D computer games control system.

BARD'S TALE 2
Star Performers, £9.99
The second – and arguably the most enjoyable – of the Bard's Tale series is one of the best of the 'old-style' (non-arcade) RPGs. Soon to be bundled with the other two in the series.

CORPORATION
Core Design, £34.99
Very much in the '3D arcade' vein, Corporation achieves something which most computer games can only dream of – it creates and maintains a wholly realistic environment. It's a futuristic space opera in the confines of an overrun conglomerate. You must lead an elite team, equipped with stunning high-tech gear, enter the building and find out what is going on.

ELVIRA, MISTRESS OF THE DARK
Accolade, £40.86
Although it's not exactly the type of game that you might expect from America's up-front queen of the B-movie (in other words, it's a tenuous licence tie-in), Elvira remains an impressive (if slightly shallow) adventure, nonetheless.

TUNNELS & TROLLS
New World, £30.99
Once again based on a popular board-based RPG, T&T doesn't have a lot to offer in the presentation department, but makes up ground with a well structured plot. Combat can be automatic or manual and can even be humorous – such as pushing enemies away. Perhaps a little dated.

WASTELAND
Electronic Arts, £24.99
Not notable for its up-to-date interface, Wasteland is however worth checking out for its unusual scenario – a post-holocaust nightmare replaces the usual dungeon-based stuff.

MARTIAN DREAMS
Origin, £36.99
Origin's second adventure outside of the acclaimed Ultima stable is an historic sci-fi jaunt in the style of H.G. Wells. Flawed, but enjoyable.

THE SAVAGE EMPIRE
Origin, £35.99
The one that came before Martian Dreams, Savage Empire borrows from the plot of The Land That Time Forgot. It might not satisfy Ultima veterans, but who cares?

EYE OF THE BEHOLDER
SSI, £30.99
Conceived and executed in the style of the classic Dungeon Master, Eye of The Beholder is exciting and challenging in equal measure. It's one of the highly-successful Advanced Dungeons and Dragons games based on the TSR role-playing tabletop game. First you must choose your party of adventurers, their race (human, dwarf, elf etc) attributes (strength, intelligence) and a whole host of other details. The adventurer's view is of a 3D dungeon and all the controls are mouse-driven. SSI has managed to maintain the feel and atmosphere of the original game while making the AD&D experience available to a lot more people.

BRAIN TEASERS

LOGICAL
Rainbow Arts, £19.99
Nicely paced and colourful arcade-based teaser which may just fail to provide any long-term interest.

E.MOTION
US Gold, £25.99
An infuriatingly compulsive arcade teaser that's as hard to describe as it is to put down. It involves matching coloured balls together causing them to disintegrate. When they have all gone you move to another level – of which there are 50. Only approach it if you've got a lot of time on your hands. It was – and still is – an wholly original game.

SARAKON
Virgin, £19.99
Similar to Shanghai, and also based on Mah Jongg, Sarakon stands head and shoulders above most of its contemporaries – in terms of difficulty at least. A 16x16 squared grid forms the basis, Square tablets each with a variety of symbols are placed randomly on the grid.
The idea – as with many card games – is to combine and discard pairs of tablets until the grid is cleared. However, tactical play adds complexity. The first level of play is called 'Stupid' and that's how you'll feel when you fail to complete it. Not for the faint of heart.

THE SENTINEL
Firebird
No Longer Available
Worth scouring the bargain bins for, Geoff Crammond's masterpiece is a rare breed – a strategy game comparable to chess which can only exist inside a computer. Easily the most atmospheric game of all time.

SPOT
Virgin, £24.99
Easily confused with the board game Othello, this is actually an original game of its own – and a rather good one too. The original game is now quite old, but was recently revamped and relaunched.

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BRAIN TEASERS

CHESSMASTER 3000
Software Toolworks, £35.99
Computer chess is computer chess – right? Well, yes ... but this one (reviewed in Issue 4) takes the pride of place through its presentation and user friendliness.
Rated 9

VAXINE
US Gold, £25.99
A sort of follow-up to E.Motion, this adds an extra dimension – well, in graphic terms at least. You roam as an abstract representation of the body shooting rogue virus cells. The action ranges over 99 levels with faster and meaner germs being introduced all the time. A new age pastime for the modern puzzle addict.

WELLTRIS
Infogrames, £39.94
From the same fomer Soviet scientists who brought you Tetris comes this 3D variation on the original theme. The object is to manipulate falling shapes. The 3D aspects means the pieces appear to fall from above. It's good enough but how can you improve on perfection?

SHANGHAI II
Activision, £30.99
A test of memory and skill using the Mah Jongg card set, this is now available in numerous PD incarnations, although none as polished as this 'official' version (reviewed in Issue 1). Rated 7

PIPEMANIA
Empire, £25.53
Second only to the great Tetris as an invisible hour eater, this tale of twisting pipes and water will provide a challenge to even the hardest gamer.

KLAX
Respray, £7.99
An unusual block-based game which uses colour coding rather than shapes to generate its puzzles. Not as addictive as Tetris, but a nice short-term diversion.

LOOPZ
Audiogenic, £25.99
Unusually compulsive puzzler which adds a new twist to the art of shape manipulation. Hard to find, but worth keeping an eye out for.

NIGHT SHIFT
Lucasfilm, £30.99
More of an arcade game than a pure puzzler, this does however have enough teasers incorporated to keep most gamers happy. Nicely humorous too.

TETRIS
Infogrames, £24.99
The greatest puzzle/dexterity game of all time. This Soviet sensation involves moving different shaped blocks to fit them together. Everytime a horizontal line is completed it disappears. The more lines completed, the more points you collect. Watch out for the original Mirrorsoft version, which is still the best around. A classic timeless game.

SPORT

4D SPORTS BOXING
Mindscape, £30.99
They don't look very much like boxers, but the strange polygon-based pugilists featured here certainly move like them. The game features multi-views of the fights and also allows you to train and develop your fighters. Control of the fighters is also comprehensive, allowing you to walk towards an opponent, back off, circle left and right and punch. The game is most fun if played in company.

TV SPORTS BASKETBALL
Cinemaware, £30.64
Unlike most previous attempts at producing a realistic computer basketball simulation, this game doesn't try to fit in the whole court at once – and is greatly enhanced because of this. Essentially you control one on-screen player at a time, the rest of the players behave according to chosen tactics. Action ranges from pure arcade friendly game to hard-fought league matches. Competitive and playable.

BUDOKAN
Star Performers, £10.99
Pretentious in tone it may be, but Electronic Arts' multiple event martial arts challenge is still the best game of its type available. Players train in four forms of combat: karate, kendo, nunchaku and the bo staff. During fights you must keep an eye on stamina and ki levels as these determine your state of health and the power of your blows. Excellent sound and graphics and an unusual level of depth and excitment for this type of game.

HARDBALL 2
Accolade, £25.53
The definitive rendition of America's favourite sport available for your computer.

LINKS
Access, £40.99
A graphically impressive and

option-filled variation on the age-old theme of computer golf. Be warned though, it's only for those of you with powerful machines.

PGA TOUR GOLF
Electronic Arts, £25.99
Overall, this has to be the best golf game currently available on any computer. It may not have Links' looks or options, but it makes up for this in terms of sheer playability.

POWERBOAT USA
Accolade, £30.99
A deceptively playable simulation of a sport which most of us would never even think about taking part in. Ignore the poor presentation – this could become a favourite.

PRO TENNIS TOUR 2
Ubi Soft, £29.99
Multiple options are available, it looks good, it plays well – what more could you want? Choices include singles and doubles matches and type of court surface. There's even an option to play two on one. Reviewed in Issue 2, this is a definite ace.
Rated 8

SKI OR DIE
Electronic Arts, £25.99
A multi-event affair which takes a lighthearted view of Fergie's favourite winter pastime. There are five sub-games: snowball blast, downhill blitz, acro aerials, snowboard halfpipe and the intertube thrash. Points are scored for being the fastest or being able to leap the furthest. The presentation and execution are impeccable. Easy to get into and most enjoyable to boot – check it out.

TV SPORTS FOOTBALL
Mirror Image, £9.99
This is, of course, American football rather than soccer. It combines strategy plays with fast arcade action.
No longer the state of the art in terms of programming, but still a comprehensive and enjoyable rendition of the sport. Made more accessible than most by the usual cinemaware TV presentation.

ADVENTURE

HEART OF CHINA
Dynamix, £39.99
Another attempt at producing an interactive movie, Heart of China is notable for its arcade subsections and – more importantly – its beautiful digitised graphics.
Set in the 1920s in Hong Kong, the basic plot involves the rescue of a nurse who has been kidnapped by a ruthless tyrant. The point and click game control interface works smooth, removing the need for any typing. This evocative action adventure is a must for VGA users.

LEISURE SUIT LARRY V
Sierra, £39.99
The other side of Sierra (contrasting nicely with the 'family' style of King's Quest, etc,) is best depicted by Al Lowe's luckless lover boy, who this time around goes in search of the missing disks of Leisure Suit Larry IV.
Here Larry must interview women to find a hostess for a sleazy TV show. But to Larry's cost, the Mafia becomes involved. More cheeky chuckles for fans of the series.

SORCERERS GET ALL THE GIRLS
Legend, £30.64
Not as saucy as the title suggests, this is nevertheless an engrossing and perplexing adventure from the old school. It's really just a text adventure, but a complex, entertaining and satisfying one nonetheless.

MAGNETIC SCROLLS COLLECTION 1
Virgin, £34.99
Reviewed in Issue 1, this three game package updates some of the adventure specialist's best-loved works using the all-new 'Windows' system (as seen in Wonderland).The games included are Corruption, Fish! and Guild of Thieves. Good value.
Rated 7

THE SECRET OF MONKEY ISLAND
Lucasfilm, £30.99
A real joy to play, Lucasfilm's first tale of dark doings on the high seas used the wealth of experience gained over five years of development, Indiana Jones, etc, to produce one of the best adventures yet.
The game is divided into three parts: the first deals with hero Guybrush Threepwood's attempts to become a pirate; the second his journey to Monkey Island; and the third all about the island itself. Good music, neat animation and detailed graphics and a superb control system all combine to produce an enjoyable experience.

THE SECRET OF MONKEY ISLAND 2
Lucasfilm, £39.99
More buccaneering brilliance with a smile on its face, as the original's hero, Guybrush Threepwood, once again takes on the evil ghost pirate LeChuck. this game demonstrates just how many brain-teasers can be constructed within the limitations of an icon-based control system.
Outstanding VGA graphics with impressive lighting and shading add to the piratical atmosphere. It's also packed with jokes. Reviewed in issue 3, this is a perfect progression from the original.
Rated 9

SPACE QUEST IV
Sierra, £34.99
In yet another ongoing saga, Sierra's comical space hero,

INDIANA JONES AND THE LAST CRUSADE
Lucasfilm, £30.99
One of the great animated graphic adventures, with plenty of atmosphere, and humour, which has only really been surpassed by Lucasfilm's subsequent efforts (now available in a double pack with Zak McKracken And The Alien Mindbenders).

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ADVENTURE

Roger Wilco, once again boldly goes on a mission that's about as much to do with time travel as space exploration and never takes itself too seriously. Sierra fans will know exactly what to expect – the unexpected!
And that means he has somehow landed slap bang in the scenario for Space Quest XII: Vohaul's Revenge and becomes involved with the Sequel Police who believe Roger's adventures have gone on far too long. Easy point and click interface control, odd-ball puzzles and digitised artwork.

SPELLCASTING
Legend, £39.99
Like Sorcerers Get All The Girls, this one was developed by the master of the tongue in cheek adventure game, Steve Meretzky. Reviewed in Issue 1, Spellcasting will appeal to any adventurer who doesn't take things too seriously.
Rated 7

WONDERLAND
Virgin, £34.99
An adventure built and played through an all-new 'Windows-style' user interface, Magnetic Scrolls' Wonderland turns Lewis Carroll's masterpiece into an absorbing beautiful game.

KING'S QUEST V
Sierra, £44.99
Roberta Williams' King's Quest was the original animated adventure game – and over the years the series has gone from strength to strength. Highly entertaining and user-friendly, this is well worth clearing out your hard disk for.

OPERATION STEALTH
US Gold, £30.99
A Bond-style adventure featuring the impressive Cinematique user-interface as developed by the ground-breaking French development team, Delphine.

ARCADE STRATEGY

BATTLETECH 2
Infocom, £39.99
Based on a highly popular futuristic combat board game, Infocom's Battletech showed in no uncertain terms that there was potentially more to that late, great company than text adventures.
Here huge mechanised monsters – Mechs – stride the land battling out with huge and powerful weapons. But this isn't just a shoot 'em up. There is a large degree of strategy involved. Reviewed in issue 3.
Rated 5

3D CONSTRUCTION KIT
Domark, £44.99
Build your own 3D worlds with this unusually powerful game creator from the team that brought you Total Eclipse and Driller. As well as constructing the geometric scenery, you can also add your own borders and music, and set up animated effects.

CASTLES
Electronic Arts, £34.99
Probably the only computer game ever to be set in Wales, Castles sees the player design, build and then defend a castle. One for the long-term strategist.

BATTLE CHESS II
Electronic Arts, £24.99
A follow-on from EA's original animated chess game, this brings the pieces to life in the same humorous way as its predecessor, while introducing the more unusual rules of Chinese Chess to a Western audience.

DRAGON'S BREATH
Palace, £31.64
Almost a board game in its style (although this is definitely a computer original), Dragon's Breath sees three human or computer-controlled players do battle through growing and nurturing battle dragons. Curiously underrated.

ELITE PLUS
MicroProse, £39.99
Not so much a sequel as an upgrading of the classic space trading game. The aim is to achieve elite status in the areas of combat, trading and piloting your ship. The space battles are immense fun, providing a clean contrast to the trading sections.

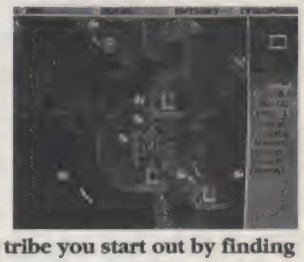
GODS
Renegade, £34.99
Reviewed in Issue 4, this was the first attempt at an arcade adventure by the Bitmap Brothers. "The best platform game to appear on the PC to date."
Rated 8

LIFE & DEATH II
Software Toolworks, £35.99
Your chance to work in the theatre – the operating theatre that is. Hilarious, messy and harmless, exactly what computer games should be.

MIDWINTER
Rainbird, £35.75
An instant classic, Maelstrom Games' 3D extravaganza looks so good that you might just forget it's an all-action game too. It covers 'green' issues including global warming and the threat of a premature ice age. Essential purchase and a landmark in computer entertainment.

POPULOUS
Electronic Arts, £29.99
This is one of the rare breed that's so mould-breaking that it's almost become a generic term. Now available in a double-pack with Sim City, this is unusual, indescribable and a true work of genius – buy it.

CIVILIZATION
MicroProse, £39.99



From the pen of Sid 'Railroad Tycoon' Meier, Civilization (reviewed in Issue 1) takes the player on a power trip through history. As the leader of a pre-historic wandering tribe you start out by finding a place to settle, expanding your population and the lands they inhabit. Slowly you lay the foundations of a society, building roads, towns, cities etc, and prepare for attacks from barbarian tribes. An immensely satisfying strategy game of planning, conquest, negotiation and exploration. Thoroughly addictive.
Rated 7

POWERMONGER

Electronic Arts, £29.99

Bullfrog's next one on from Populous didn't have quite the same impact as its predecessor, but it remains a classic wargame and graphically impressive to boot.

There is an option to connect computers together via a modem or direct cable so two human players can compete head-to-head. The game also supports a network option allowing four-player competition.

The amount of detail in the game is incredible – birds rustling feathers, voices of blacksmiths in their workshops and cheering. An epic entertainment. Check out the review in Issue 3.

Rated 8

SIM CITY

Infogrames, £30.64

Another game to have spawned a thousand clones, Maxis' mix of town planning, crisis management and downright megalomania has achieved the impossible – to make urban politics fun!

Build up your town from a green field site, populate it with people, give them a transport network and services, and then try to maintain law and order as they take on a life of their own. Defintiely not to be missed.

SIM EARTH

Ocean, £40.86

Not so much a world manager as a world builder, Maxis followed Sim City with an educational tool based on the Gaia hypothesis and puts the player in charge of every single aspect of a living planet, from the raising and lowering of land masses to the creation and population of the seas. The program is enormously flexible. You need a 286 or above to really appreciate the game. Complex in the extreme, and detailed enough to keep your interest for many months.

STELLAR 7

Dynamix, £44.99

Remember the original arcade game Battlezone? Dynamix' interpretation is a bit more colourful, but thankfully the old-fashioned game play has not been thrown out with the old-fashioned presentation. It's just as addictive now as then.

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While we aim to make the buyer's guide as comprehensive as possible we need your help to keep our readers informed of all your special offers and promotional deals. If you have any forthcoming promotions or special offers which would be of interest to PC owners, let us know and we'll tell our readers.

ATTENTION: READERS

We hope that you've found the buyer's guide useful and entertaining, but we also want to keep improving it to meet your needs. Tell us what you like or dislike, what sections you'd like to see added or changed, and we'll do our best to accommodate the most popular suggestions. Please write to us at:

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THE COMPUTER STORE

NEW *** DIVISION ONE 92 REVISION ONE *** NEW

DIVISION ONE 92 REV 1

"(The Midnight Oil) treat soccer in the sophisticated way Americans treat their national games." -The Guardian

THE GAME Everyone has their own ideas on what makes a soccer team "tick". Here is the opportunity to put into practice your own ideas. Operating from the English 1st division you must build a squad to challenge for the league title, the FA and League Cups and the 3 European trophies. And as players age, rebuild the team while holding off relegation.

SQUADS/TRANSFER MARKET In a 3 squad system (1st team squad, reserve squad and youth squad), use the continuous intake of youth players and training program to create a squad whose skills reflect your ideas. Supplement these skills with carefully selected transfer market acquisitions. As they age, veterans fade and youngsters develop, keep an eye on the changing skills of your team

SKILLS All players have a balance of 5 skills (no "skill levels") which you must develop by experimenting with your team. Even more important will be your judgement about the effect of the particular team balance or skill combination on the outcome of the match, and subsequently a season of football. Suitable training can develop/enhance skills.

MATCH/STATS Your judgement will be put to the test in this unique 4 minute match/stats simulation against accurately simulated opposition. This is the measure of your team and your most reliable source of information. There are displays of: match flow, two teams, player-with-the-ball, injuries, discipline, substitutions, in-match tactics, goal scorers, possession breakdown and performance assessment.

REVISION ONE
The best just got better! All updates that have been made to Division One 92 over the last six months. In addition the match screen has improved, opposition team info expanded, a European transfer market added and a few more minor changes. An edit program and a customisation program have also been added. The manual has been expanded and the packaging improved.

EDIT PROGRAM. Edit the team and players that make up Division One. Produce **your own** Division One, or Scottish League, British League, European League, German/Spanish/French/Italian...etc...etc. Or even make up a league of all the best teams you've ever seen.

CUSTOMISATION PROGRAM Customise the 45 man starting squad. Use your own favourite players, or your local side. How about as squad with Pele, Beckenbauer, Best, Cruyff, Maradonna ....?

WHAT IS DIFFERENT ABOUT THIS GAME?

Division One 92 transforms the soccer management game. You can concentrate on the football. Experiment with players, formations, team styles. Build your dream squad and check it out in accurately simulated league/cup football. Match results are from a unique soccer match. Every pass, tackle, shot etc. is determined by the players involved. Your choice of skills thus influences match results. Mental arithmetic has been dumped. Football knowledge is the name of the game.

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Headcoach V3 has been described as "the best game ever put onto a computer" It is the complete American Football game, a multi season epic with the very best strategic elements of the real thing. You will call the plays, devise the gameplans and develop the team.

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Players will age and teams will fade (a player will last about 6 seasons), but you will stay and rebuild ....

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Joysticks & Gamecards	
CH Flightstick	£34.95
CH Gamecard Automatic - 33Mhz	£29.95
CH Gamecard Automatic - 33Mhz MCA	£34.95
Suncom Analog Edge	£17.95
Suncom Analog Plus	£24.95
Suncom Analog Xtra	£29.95
Suncom Gameport II Plus	£22.95
Windows 3.0 With Multimedia Extentions 1.0 On CD-Rom	£54.95
Tecnoplus Sound System (Sound Blaster V2.0,J306 Speakers,Joystick & KQ6)	£159.95

All prices include VAT and Postage
No hidden extras !!

Extensive range of PC Entertainment titles in stock and full range of Soundblaster accesories - please phone for full price list

PC review Buyers' guide

Because all of us here at *PC Review* are PC users as well as reviewers we're perfectly placed to know that shopping for your PC can be a veritable nightmare, even if you're looking for something as simple as a joystick. The PC's open architecture has meant that expanding the machine is a fairly simple operation, but it's also meant that, during its 10 years of existence, the machine has attracted an enormous number of manufacturers of both hardware and software. The choice facing the potential buyer is vast and continually growing.

That's why we've set aside more than 10 pages in each issue to guide you through the quagmire of hardware and software. Within this section you'll find up to date information on the very best hardware and software available. Not only will we tell you what you can buy, but where you can buy it from and how much it will dent your pocket.

We don't claim that the guide in a single issue is exhaustive, but over the course of a few months you'll find it builds up into an invaluable reference work for PC buyers.

Happy browsing!

HOW TO USE THIS GUIDE

We've divided the guide into four easy to use sections. **Hardware** lists add-ons and upgrades that will improve your PC's performance or add features not available on the basic model. **Software** gives you a run-down of a wide-range of productivity software and utility programs. **Ancillary** is for those of you who want to invest in a new machine or simply keep your existing machine in tip top condition.

Within each section you'll find that we've listed the basic capabilities of each product as well as any major plus or minus points. If you're a little confused by Technospeak (and [illegible] all from time to time) just turn to our *Technical Terms* [illegible] for a simple explanation.

All of the prices given are inclusive of VAT at 17.5%, although where there is no recommended retail price for a particular product we've listed the average price, thus: c£350. Please [illegible] in mind that these prices do not include postage and packaging, courier charges, etc.

If you require further details on a product then simply look up the supplier in our directory, where you'll find an appropriate telephone number and address.

What could be simpler?

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We have done everything humanly possible to check the information in this guide. But prices do change, distribution switches from one company to another, even brand names can be updated. While we will update the information regularly to take account of this, we can't be held responsible for any errors contained herein.

Anyone – suppliers, publishers, readers – who knows of products suitable for inclusion but which have mysteriously been omitted can write in with details (write, please, don't phone) to the address at the front of the magazine.

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PC hardware

MEMORY UPGRADES

Most PCs will take extra memory chips, either on a slot-in card, or directly onto the motherboard – and just as well, given the latest crop of memory hungry games. The minimum RAM acceptable these days is 640K; some older PCs (such as the Amstrad PC1512) were sold with 512K. However, an increasing number of games make use of extended or expanded memory above 640K, and you'll need a good 2Mb should you ever want to run Windows. The prices quoted here are for a selection of IBM and Amstrad machines. Prices for other clones may vary.

Size/Type	Price	Comments	Supplier
1Mb/Card	£94	For IBM XT	Memory Direct
2Mb/Card	£146.88	For IBM XT	Memory Direct
2Mb/Card	£164.50	For IBM AT	Memory Direct
2Mb/Card	£246.75	For IBM AT (LIM 4)	Memory Direct
4Mb/Card	£339.57	For IBM AT (LIM 4)	Memory Direct
640K/Chip Set	£29.95	For Amstrad PC1512	Evesham Micros
4Mb/Chip Set	£160	For Amstrad PC2286	Evesham Micros
16Mb/Chip Set	£815.45	For Amstrad PC2386	Memory Direct

TECHNICAL TERMS

The original XT and AT could only directly address a maximum of 640K of RAM, but there are two methods of extending the available RAM on these machines. The first is known as Extended Memory (more on this later) where the extra memory is treated as a continuous block of RAM and is accessed in its entirety. The alternative is known as Expanded Memory Specification (LIM EMS), named after the three companies who created it. LIM 4 is the latest version of this, designed to work with DOS Version 5.0 and beyond. Most software that uses extended or expanded memory is configured to work with only one of these systems, so you should check which of them your application can support before you make a purchase decision.

HARD CARDS

No room for a hard disk drive? Want a simple plug in, cheaper solution? Hard cards fit into a free expansion slot and can be used as a conventional hard drive.

• The XL versions of Time's Smartcards are supplied without driving software. If you wish to buy the version with the software please add £47 to the listed price.

Model	Type	Capacity	Speed	Width	Price	Supplier
Smartcard 30XL	XT/AT	32Mb	24ms	1 Slot	£205.62	Time
32MbXT	XT	32Mb	40ms	1.5 Slots	£186.83	RSC
Smartcard 40XL	XT/AT	40Mb	24ms	1 Slot	£229.13	Time
45MbXT	XT	45Mb	19ms	1 Slot	£233.83	RSC
45MbAT	AT	45Mb	19ms	1 Slot	£233.83	RSC
Smartcard 100XL	XT	100Mb	19ms	1 Slot	£417.13	Time
Smartcard 100XL	AT	100Mb	19ms	1 Slot	£534.63	Time

TECHNICAL TERMS

Cards which occupy 1.5 slots and project out from your machine a bit further, and may be awkward to position, so check it's the right size for your machine. The speed of a card is usually given as its average seek time – the time it takes for the read/write head to reach the required location on the disk.

• RSC's cards are supplied with a free copy of Norton Utilities v.5 (RRP £139)

HARD DISKS

Model	Interface	Capacity	Speed	Size	Price	Supplier
Seagate ST325N	SCSI	32Mb	28ms	3.5" 1" high	£205.63	Dataplex
Seagate ST351A/X	AT/XT	42Mb	28ms	3.5" 1" high	£193.88	Dataplex
Seagate ST125A	IDE	21Mb	28ms	3.5" half height	£170.38	Corporate Upgrades Ltd
Seagate ST157A	IDE	44Mb	28ms	3.5" half height	£163.33	Corporate Upgrades Ltd
Seagate ST225	MFM	21Mb	65ms	5.25" half height	135.13	Dataplex
Conner CP3024	IDE	21Mb	27ms	3.5" 1" high	£176.25	Unimart Computers Ltd
Conner CP3044	IDE	42Mb	25ms	3.5" 1" high	£217.38	Unimart Computers Ltd

TECHNICAL TERMS

There are two types of hard disk interface commonly available – IDE and SCSI. IDE drives are cheaper and are the most common type found in desktop machines. If your machine already has an IDE hard drive you will be able to add another. There are a number of variations on the SCSI interface, so make sure that you get the right one for your machine.

If you're using a PC which has only floppy disk drives, then a hard drive could change your life. With capacities ranging from 20Mb to well over 100Mb (more in business heavyweight machines), you can store all your programs, all your data, on the one drive, and still access it far more quickly than on floppy. No more disk-swapping every five minutes, no more booting DOS from floppy every time you switch on. Also, more and more games these days actually require you to install them on a hard disk.

GRAPHICS CARDS

The PC has had a long and chequered history of different graphics standards, thanks to IBM's decision not to include graphics at all in the original machine. The current best standard now for games is VGA (Video Graphics Array): with a maximum of 256 colours on-screen, this really shows off the potential of PC games.

Type	RAM	Size	Resolution	Colours	Price	Supplier
Hercules	64 Kb	8-Bit	640x350	2	£28.20	Watford Electronics
CGA	64Kb	8 bit	320x200	4	£37.60	Watford Electronics
EGA	256Kb	8-Bit	640x350	16	£76.38	Watford Electronics
VGA	512K	16 bit	1024x768	256	£92.83	Dataplex
SVGA	1Mb	16 bit	1024x768	256	£92.83	DS Computers

• Watford Electronics graphics cards are all supplied with a built-in parallel printer port.

SOUNDBOARDS

Until recently, the best the PC could produce in the way of sound was 'beep'. But the advent of soundboards has changed things dramatically. A soundboard will take up a single expansion slot and produce genuine music and background sound effects in the games which support it – which is an ever-increasing number these days. Below are the 'standard' soundboards catered for by most titles.

Name	Supplier	Price
AdLib	Mindscape	£89.99

Comment Currently the most popular system, and a good trade-off between price and performance.

LAPC-1	Roland	£379.00

Comment Superb sound quality probably priced out of the reach of many games players. Non AdLib-compatible.

SoundBlaster v2.0	WestPoint Creative	£139.95

Comment AdLib-compatible and capable of producing sampled sounds. Try it with Wing Commander 2 to hear what we mean!

SoundBlaster Pro	WestPoint Creative	£249.95

Comment Has all the features of soundblaster, but is compatible with many CD ROM games.

PC add ons

JOYSTICKS

No provision is made in the design of the standard PC to plug a joystick in directly. You'll need a joystick card in one of your expansion slots which allows an analogue joystick to be plugged in. A number of manufacturers sell both cards and joysticks together. For flight sims and racing games, yoke and pedal style controllers are also available.

• The Tecniche stick is available without games card for £17.61

• The Analog sticks are both available without games cards for £12 and £15 lower than the marked prices respectively.

Product	Price	Supplier	Comments
Anko AK-GC27A	£19.95	ABS Computer Supplies	Auto-fire option
IBM Joystick	£19.95	Computer Mates Ltd	Includes games card
Powerport 2	£63.45	Power Mark	Self-adjusting PS/2 Twin Port
The Yoke	£57.58	Power Mark	Self-centring Yoke
Gravis Analogue Stick	£48.18	Power Mark	8 Tension adjusters!
Tecniche PC Power Stick	£23.49	RSC Ltd	Includes games card
Analog Edge	£29.99	Evesham Micros	Includes games card
Analog Xtra	£39.99	Evesham Micros	Includes games card
Gravis PC Mousestick	£89.95	RC Simulations	Includes games card

MICE AND TRACKBALLS

Many games are tailored to be easily controllable with a mouse, which is much more of a standard PC add-on than a joystick. Then again, there is the trackball, which in effect is an upside-down mouse, with you moving the ball directly to control on-screen movement – useful if your desk space is limited or you're using it with a portable machine.

Product	Price	Supplier	Comments
Genius GM6000	£28.95	ABS Computer Supplies	Includes pocket, pad and software
Genius GMF302	£37.95	ABS Computer Supplies	As above, higher resolution

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Tel : 061-839-5101

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Watford WD1 2AT
Tel : 0923 213494

3 Chevy Chase
Eldon Square Centre\
Newcastle-upon- Tyne
NE1 7UG
Tel : 091 230 0239

GAME LIMITED

Product	Price	Supplier	Comments
Anko AKTB500	£49.95	ABS Computer Supplies	Trackball with 'drag button'
Logitech Mouseman	£62.28	Acolyte Services	
Cordless Mouseman	£116.33	Acolyte Services	Uses radio technology
Logitech Pilot	£45.83	Dataplex	
Tec-Mouse	£34.08	Dimension Computers Ltd	Includes paint software
Microsoft Ballpoint	£104.58	Dimension Computers Ltd	Trackball for portables
Amstrad Mouse	£22.33	Dimension Computers Ltd	Works with Amstrad PCs
Axelen Mouse	£21.15	DS Computers	
Truemouse	£22.99	Evesham Micros	Serial/ PS/2 /Amstrad versions
Cordless Truemouse	£49.95	Evesham Micros	As above but with infra-red link
Golden Image Mouse	£34.95	Evesham Micros	Optical Mouse
Trackball	£39.99	Evesham Micros	Features lock drag
Mousepen	£116.33	KSI	Mouse shaped like a pen
Unmouse	£159.80	Picture Perfect UK Ltd	Tablet – use finger as
mouse!Nakasha Mouse	£41.13	RSC Ltd	Includes DPaint II
Squik Mouse	£19.98	RSC Ltd	Low cost serial mouse

TECHNICAL TERMS

A Mouse or Trackball requires a **mouse driver** to be installed before it will operate. Most devices are supplied with suitable software, but you should check first with the manufacturer. You should also note that there are different types of mice and trackballs designed to work with different systems eg **Serial** and **Microsoft Compatible**, so make sure that you are buying the device that is correct for your model of PC.

MODEMS

Get your PC to be more sociable. A modem will connect you to other PCs via the telephone lines, giving you access to bulletin boards, public database networks and multi-user games – or you can simply use it to send messages to friends.

Product	Price	Manufacturer
Biscom (internal)	£258.50	Dataflex
Biscom (external)	£323.13	Dataflex
Comfax (internal)	£387.75	Dataflex
Comfax (external)	£517.00	Dataflex
Courier 2400e Quad (internal)	£464.13	Miracom
Courier 2400e Quad (external)	£522.88	Miracom
Keycard 3000 V22	£346.63	Miracom
Keycard 3000 V22 BIS	£464.13	Miracom
PC Professional	£517.00	Dataflex
Quadcom (internal)	£387.75	Dataflex
Quadcom (external)	£517.00	Dataflex
Rapier (internal)	£646.25	Dataflex
Stradcom (internal)	£193.88	Dataflex
Stradcom (external)	£229.13	Dataflex
WS4000 (SB2422)	£186.83	Miracom
Quattro 2400	c£500.00	Dowty
Smartmodem 2400 Quad	£339.57	Hayes
SM2400	£222.08	Amstrad
Milgo Maxam IV	£468.83	Racal
2400 MNP Class 5	£468.83	Worldport

TECHNICAL TERMS

PC Modems come in two types **internal** and **external**. Internal versions require a spare expansion slot, but they are usually cheaper than external counterparts. External versions plug into a **serial port** instead. If you are going to use your modem to communicate with another copy of it at a particular bulletin board then you should pay close attention to the protocols it uses. Both modems must support the appropriate modem.

DOT-MATRIX PRINTERS UNDER £300

Dot matrix printers are coming down in price, but at the same time the quality is improving: letter quality modes are no longer dotty or lacking true descenders on letters such as 'g' or 'y'. This is particularly true of models with a 24-pin printhead. This is probably a good time to buy.

Company/model	Price	Speed	Buffer	Type
Amstrad DMP3160	£233.83	160/40	16K	9-Pin
Brother M-1209	£264.38	168/35	2K	9-Pin
Citizen 124D	£292.58	120/40	8-32K	24-Pin

Company/model	Price	Speed	Buffer	Type
Epson LX850	£269.08	200/30	4-32K	9-Pin
Mannesmann Tally MT81	£186.83	155/26	8K	9-Pin
Olivetti DM109	£257.33	240/36	21K	9-Pin
Panasonic KX-P1180	£252.63	192/38	2-K	9-Pin
Samsung SP 0930N	£222.08	300/50	3-11K	9-Pin
Seikosha SP1900AI	£116.33	192/40	1K	9-Pin
Seikosha SP2000	£233.83	160/40	6K	9-Pin
Victor VP10D	£210.33	175/30	None	9-Pin

TECHNICAL TERMS

A printers speed is a measurement of the number of characters it can print per second. The first figure is for draft mode and the second figure is for Near Letter Quality (NLQ) mode. The Buffer Size is an indication of the amount of internal memory the printer has. The higher this figure is, the quicker your PC will be released to perform other tasks.

INK JET PRINTERS

Ink jets are the newly fashionable item for style-conscious PC owners: with distinctly better print quality than dot matrixes , the advantage of being virtually silent.

Company	Model	Price	Speed (Pages per minute)	Resident fonts
Mannesmann	Tally	£1,0994	pp	14 bitmap
Seikosha	OP-104	£940	4	14 bitmap
Hewlett-Packard	LaserJet III	£1,749	8	8 Scalable
Samsung	SL-1081A	£891	8	24 bitmap
Oki	OL830	£1,499	8	7 scalable Adobe
Oki	OL400	£899	4	25 bitmap
Olivetti	PG308	£1,399	4	24 bitmap
AEG	Laserstar 6	£999	6	9 Fonts

LASER PRINTERS

Laser printers have the same advantage of being quiet as ink jets and while they are not much more expensive, the resolution is markedly better. Laser printers are rapidly replacing dot matrix models as the standard office 'workhorse'.

Company	Price	Speed	Buffer
Brother HJ100	£405.38	142/83	37K
Canon BJ300	£699.13	300/150	30-128K
Epson SQ850	£903.58	600/198	8K
Hewlett-Packard DeskJet 500	£586.33	240/120	16K
IBM 4072 ExecJet	£868.33	600/300	30K
Mannesmann Tally MT9	£938.83	220/110	32K
Olivetti JP350	£586.33	360/120	8K

EXTERNAL DRIVES

If you don't have space for any more floppy disk drives – a problem with newer slimline models, you can always add an external model.

Model	Size	Capacity	Price	Supplier
IBM compatibles	3.5"	720Kb	£109.95	ABS Computer Supplies
IBM Compatibles	3.5"	1.44Mb	£119.95	ABS Computer Supplies
IBM Compatibles	5.25"	360Kb	£119.95	ABS Computer Supplies
IBM Compatibles	5.25"	1.2Mb	£129.95	ABS Computer Supplies
Amstrad 2000 range	5.25"	360K	£57.58	RSC Ltd
Amstrad 2000 range	5.25"	1.2Mb	£76.38	RSC Ltd
Olivetti/Amstrad 3000s	5.25"	1.2Mb	£175.08	RSC Ltd

CD ROM DRIVES

Are you looking to make your PC the ultimate games machine? Then a CD ROM drive is the perfect addition. CD ROMS offer a huge storage capacity, typically the equivalent of about 700 720Kb floppy disks! The only disadvantage is the slow access speed. There are not too many games or other CD ROM applications available at the moment, but the list is growing larger every month.

Model	Price	Supplier	Comments
Chinon CDS431	£351.33	SMC Computers	Internal
Goldstar GT2000	£398.33	SMC Computers	External
Philips CM50	£316.08	Diamond Computers	Portable

•The Philips drive comes with a free copy of World Atlas and Audio Player

DEALER DIRECTORY

CUSTOM GAMES
Incorporating
Just Micro

22 Carver Street
Sheffield
S1 4SF

TEL : 0742 752732

STARGAZER
Amiga and PC
Specialists
37 Upper Ththing Street
Worcester
WR1 1JZ

Tel : 0905 726259

GALLERY SOFTWARE

140 ARNDALE CENTRE
WANDSWORTH
LONDON
SW18 4TQ

Tel : 081-877-1017
Fax : 081-870-4941

PC Software and hardware retailers - Contact us for all your PC requirements.

DEALER DIRECTORY

BYTES N' PCs

4 STOCKWELL HEAD
HINCKLEY
LEICESTERSHIRE
LE10 1RE

FAX : 0455 615164
TEL : 0455 613232

A-Z LEISURE

23A LOWER MALL
WESTON FAVELL CENTRE
NORTHAMPTON
NN3 4JZ

TEL : 0604 414528

COMPUTER RUN

21 STATION WAY
COXETERS YARD
ABINGDON
OXON
OX14 3RJ

TEL: 0235 528393

BYTES AND PCS

4 STOCKWELL HEAD
HINCKLEY
LEICESTERSHIRE
LE10 1RE

TEL : 0455 613232

HAND SCANNERS

If you use any sort of Desktop Publishing package, then a hand scanner is an invaluable addition to your PC. While most hand scanners can only read small images and at a relatively low resolution, they are considerably cheaper than flatbed scanners.

- *The PC Hand Scanner comes with a free copy of Microsoft Windows.*
- *The Marstek M105 Plus and M800 Plus are also available in versions for Windows. Add the suffix W to the model number and read the price as £139.83 and £186.83 respectively.*

Model	Price	Colours	Supplier
AG-256	£164.50	256 grey shades	Watford Electronics
Genius GS-B105G	£176.25	256 grey shades	Reeves
PC Hand Scanner	£82.19	16 grey shades	UK Home Computers
Marstek M105	£81.08	64 grey shades	RSC Ltd
Marstek M105 Plus	£110.45	64 grey shades	RSC Ltd
Marstek M800 Plus	£169.20	64 grey shades	RSC Ltd
Marstek M-6000 CG Color Artist	£327.83	262,144 colours	RSC Ltd

DIGITISERS

While not being quite so high up on the essential DTP buy list as a scanner, a rudimentary digitiser can transform the appearance of your documents. Digitisers will allow you to import line-based artwork by tracing it with a stylus or puck. They're also ideal for Computer Aided Design applications.

PC software

GRAPHICS SOFTWARE

So you're the artistic type? If so then in the PC you have a potentially limitless canvas, not to mention a huge choice of software with which to realise your potential. Here's a selection of the best for budding Renoirs.

Product	Price	Supplier	Comments
VBase	£175.08	Highland Grafix	Full colour picture database
Clip Art	£5.88	Cybernetic Imagination	Range of disks containing 30 images each in PCX or IMG format
Deluxe Paint II Enhanced	£99.99	Electronic Arts	The standard cheap paint program for PCs
Deluxe Paint Animator	£99.99	Electronic Arts	One of a range of DPaint add-ons
Disney Animation Studio	£99.99	Empire	Cel animation package
Corel Draw v2	£270.25	Corel	Very popular and versatile
Designworks	£149.00	GST Software	New drawing package, comprehensive and great value

DTP SOFTWARE

The PC has always been a superb machine for DTP applications, and now that Windows 3 is firmly established this is even more the case. There are already a host of excellent DTP packages available for the PC at prices to suit every pocket. Here is just a small selection.

Product	Price	Supplier	Comments
Page Plus	£160.98	Serif	Budget priced page layout for Windows
Timeworks Lite	£41.13	GST	Simple DTP
Deskpress	£235.00	GST	Timeworks and more!
Pagemaker	£457.08	Aldus	Professional DTP package
Ventura Publisher	£587.50	Ventura	Professional DTP Package
Timeworks DTP 2	£116.33	GST	Improved version of the budget system

COMMUNICATIONS SOFTWARE

If you're one of those sociable types that likes to to link-up, go on-line, and download from time to time then you're going to need some suitable software to get in touch with your fellow PC owners.

Product	Price	Supplier	Comments
Sage Chit-Chat	£66.98	Computers By Post	
Crosstalk	£71.68	Computers By Post	For Windows 3
Eazlink	Shareware	Various	Try before you buy!
Mirror 3	£121.03	Computers By Post	With teletext emulation
PC Anywhere IV	£101.05	Computers By Post	
Procomm Plus	Shareware	Various	Very Powerful System
Odyssey	£104.57	Shareware Marketing	Cost effective advanced comms

There are plenty of packages to choose from, especially in the Public Domain libraries. Here are a few we recommend you consider.

COMPOSING SOFTWARE

Gone are the days when you had to sit huddled over a second-hand Bontempi scratching notes onto a piece of torn manuscript. Most modern PC music packages make life a lot easier, some will even construct the score for you!

Product	Price	Supplier	Comments
Music Studio 3	£70.50	Datel	Sequencer, composer, score printing.
SPJunior	£163.325	Computer Music Systems	Music package
Sequencer plus Junior	£64.63	Computer Music Systems	64 track sequencer
Sequencer Plus Classic	£193.88	Computer Music Systems	500 track sequencer
Cadenza	£198.58	Digital Music	Sequencer with graphic editing
The Musicator	£368.95	Digital Music	Notation based sequencer
The Composer's Pen	£146.88	Composit Software	
Pianola	£29.38	Clockwork Software	
SongWright	£99	PC Services Scorewriting system	

ANTI VIRAL

It's a sad state of affairs that Anti-Viral software is needed at all, but unfortunately there are still lots of people out there in computerland who haven't grown up and think it's funny to wreck other people's work and enjoyment of their machine. Naturally the same people don't think it's very funny when it happens to them. If you are one of these people then may we express complete contempt for your activities on behalf of the computing community. If you're one of the remaining 99.9% of decent, honest computer users, here are a few useful pieces of software to protect you from the aforementioned nerds.

Product **Price** **Supplier**

Dr Solomon's Anti-Virus Toolkit *£69.33* *S&S International*
Comments: £99 for 4 quarterly upgrades; £275 for upgrades, monthly newsletter and fax alerts. Complete kit of tools for identification, removal of and immunisation against the dreaded virus, with other disk goodies too.

The Computer Virus Protection Handbook (Colin Haynes) *£27.00* *Sybex*
ISBN 0-89588-696-0
Comments: Includes 5.25" disk: The what, how and why of viruses including simulated ones on disk for quick recognition. Also covers disaster plans and industrial sabotage.

The Computer Virus Handbook (Richard B. Levin) *£22.95* *Osborne McGraw-Hill*
ISBN 0-07-881647-5
Comments: Lots of advice and short programs to avoid virus attacks. Covers hard disks too.

PC Immunise II *£39.95* *SA Software*
Comments: Protects hard and floppy disks and files with three levels of detection and help screens.

Virus Buster *#95* *VB Software*
Comments: Comprehensive and easy to install software. Checks for more than 550 viruses; first update free then #50 per year for maintenance.

Norton Anti Virus Version 1.5 *#149* *Symantec*
Comments: Comprehensive, provides protection against 700 viruses, price includes opportunity to attend Virus Clinic and access to Virus InfoLine for latest information.

MISCELLANEOUS UTILITIES AND PRODUCTIVITY SOFTWARE

Can't find what you're looking for in our other software sections? Then you'll probably find it here. Below we present a pot pourii of the very best of the rest.

Product	Price	Supplier	Comment
Autoroute Express	£61.10	NextBase	First rate route planning software
Coursemaster	£29.38	IntraSet	Betting aid for flat & hunt racing
Eight In One Gold	£115.15	Logman Logotron	Integrated WP, spellchecker, outliner, spreadsheet, database etc.
Flexibak Plus	£35.25	Nildram	Hard disk back-up utility
Framework IV	£458.25	Ashton-Tate	One of the better integrated systems
LogoLink	£34.08	Locomotive	Transfer files PCW-PC
Microtext Adaptor	£198.58	Microtext	Half card adding teletext to your PC
Mini Office Personal	£29.38	Europress	Database, WP, spreadsheet, label printer and comms.
Money Manager	£58.75	Connect Software	Household Finance
PC2 Teletext	£176.25	Microboss	External teletext adaptor and software
Printing Press	£45.83	Power Up	Make letterheads, posters etc
ProBook	£52.88	BBHW	Database and address book
Scoredraw	£72.00	RDN	Comparative analysis system for football result prediction

DEALER DIRECTORY

SOFTSPOT LTD

OXFORD COMPUTER CENTRE
4 LINCOLN HOUSE
TURI STREET
OXFORD
OX1 2DS

TEL : 0865 794202

ERA VIRTUAL REALITY

Unit 6
The Capital Exchange Centre
Queen Street
Cardiff
CF1 41IQ

Tel : 0222 641089

ERA / BEATTIES

UNIT 8
THE SHIRES
LEICESTER
LE1 4FR

TEL : 0533 512697

THINK PLAN LTD

3 RIVERSIDE WALK
BISHOPS STORTFORD
HERTS
CH23 5AJ

TEL : 0279 506535

DEALER DIRECTORY

ULTIMA RETAIL

UNIT 2
THE FRIARY CENTRE
2 FRIARS WALK
READING
BERKS
RG1 1B4
TEL : 0734 568510

118 EAST STREET
SOUTHAMPTON
SO1 1HD
TEL : 0703 639419

UNIT 28
WHITE LION WALK
GUILDFORD
SURREY
TEL : 0483 506939

M.D.S COMPUTERS

UNIT 47 INSHOPS
RIGHTON HOUSE
THORNBY
STOCKOE-ON-TEES
CLEVELAND
TS17 9EP
TEL : 0642 764199

THE CARTRIDGE FAMILY

151 HIGH STREET
TEWKSBURY
GLOS GL20 5JP

TEL : 0684 290097

Product	Price	Supplier	Comment
Trackmaster	£20.00	Intraset	Greyhound racing tipster
Xtree Easy	£58.75	Softsel	DOS File manager
386^MAX	£79	International Data Systems	Memory Manager
Hijaak	£95	Software Paradise	Easy to use screen capture programme
Fast Lynx	£124.95	Ctrl-Alt-Deli	File transfer between PCs
Mace Utilities	#59.00	Software Construction Co	Intelligen full function disk recovery and optimiser.
Magellan	£115	Lotus Development	File viewer that finds a file in seconds.
Microsoft Works	#145		Capable and comprehensive integrated package
Microsoft Works for Windows	#145	Windows 3	integrated package - excellent value
Microtext Adaptor	£198.58	Microtext	Half card adding teletext to your PC
Mini Office Personal	£29.38	Europress	Database, WP, spreadsheet, label printer and comms.
Norton Utilities Version 5	£100	Symantec	Classic disk recovery & optimiser
Pinch and Punch 5	#30	Iolo Davidson	Simple to use screen grabber
PC Tools V 7	#139	Central Point Software	Good range of easy to use utilities
ProBook	£52.88	BBHW	Database and address book
Professional Master Key	$25	Shareware	Shareware counterpart of Norton utilities
QEMM	£65	Quarterdeck	Memory Manager
Spinrite II	#89	Software Paradise	A disk optimiser specially designed to detect and correct disk problems before they occur
System Sleuth	#99.95	Megatech	Tells you what's inside your PC

PORTABLES

Whether for games or more serious use, a portable enables you to take your programs with you. Most are best used when you are able to plug into the mains on-site: battery power normally lasts between 1.5 to 3 hours. Portables are now becoming genuinely slim and light enough to carry around in comfort.

Company/Model Screen	Price (ex. VAT) Slots	Speed Weight	Disk Size Size (mm)	RAM
Amstrad ACL-386SX	£3,999	20 Mhz	120 Mb	4 Mb
VGA LCD	Yes	8.0 Kg	320x400x113	
Compaq SLT 386S/20	£4,195	20 Mhz	60 Mb	2 Mb
VGA LCD	Yes	6.4 Kg	106x343x216	
Dell System 320LT	£1,999	20 Mhz	20 Mb	1 Mb
VGA LCD	Optional	6.8 Kg	318x89x360	
Epson AX 3/33	£5,999	33 Mhz	80 Mb	4 Mb
VGA LCD	Optional	7.8 Kg	360x325x110	
NEC Prospeed 286	£3,145	16 Mb	40 Mb	1 Mb
VGA LCD	No	6.8 Kg	330x376x89	
Olivetti A12	£1,199	12 Mhz	20 Mb	1 Mb
CGA LCD	No	2.95 Kg	297x210x52	
Panasonic CF-270	£2,195	16 Mhz	20 Mb	1 Mb
VGA LCD	No	3.1 Kg	310x245x44	
Philips PCL101	£799	10 Mhz	No	1 Mb
CGA LCD	No	1.6 Kg	220x280x28	
Samsung 386S/16	£2,220	16 Mhz	60 Mb	1 Mb
VGA LCD	No	3.2 Kg	297x213x51	
Sanyo MBC-17NB	£1,495	12.5 Mhz	20 Mb	1 Mb
VGA LCD	No	3.2 Kg		
	310x255x52			
Sharp PC-8501	£7,995	20 Mhz	100 Mb	2 Mb
VGA LCD	No	6.9 Kg	318x399x94	
Tandy 1500HD	£1,300	10 Mhz	20 Mb	1 Mb
CGA LCD	No	2.7 Kg	309x245x94	
Toshiba T3100SX	£3,850	16 Mhz	40 Mb	1 Mb
VGA Plasma	Optional	6.8 Kg	360x310x80	
Zenith Supersport SX	£2,795	16 Mhz	40 Mb	1 Mb
VGA LCD	No	7.7 Kg	380x310x85	

MAINTENANCE AND REPAIR

A variant of Parkinson's Law states that your computer probably won't go wrong while you still have that 12 month, on-site warranty intact. Once it expires, that's when the machine will start playing up. Below we list some of the companies which will provide you with a service contract and then come to your rescue.

Company	Price	Duration	Call Out
Data Recovery Service			
AEM	10-12% value	5 years	24-48 hours
FMG	Up to £470 PA	5 years	Next day
Kalamazoo	9-12% of value	5 years	8 hours
Newbury Data	6-12% of value	Flexible	8 hours
Response	8-11% of value	Flexible	8 hours

PC directory

Below you'll find contact numbers and addresses for all the suppliers we've mentioned in the sections covering hardware and serious software.

ABS Computer Supplies 071 224 8320
4 Shouldham Street, London, W1H 5FG.
Acolyte Services 041 848 0055/0066
Victoria Buildings Business Centre, Violet Street, Paisley, PA1 1PA.
AEG Olympia
The Ridgeway, Iver, Bucks SL0 9HX 0753 630111
AEM 0684 850505
Unit 4, Tewkesbury Ind Est., Green Lane, Tewkesbury, Glos., GL20 8HD
AKORE Limited Shareware 0800 252221
7 Fishergate Point, Lower Parliament Street, Nottingham NG1 1GD
Freepost, Akore, Nottingham, NG1 1BR
Amstrad (Centresoft) 021 625 3302
Amstrad plc 0277 262326
PO Box 462, Brentwood, Essex, CM14 4EF
Brother
Shepley Street, Audenshaw, Manchester M34 5JD 061 330 6531
Canon UK 081 773 3173
Manor Road, Wallington, Surrey SM6 0AJ
Citizen Europe 0895 272621
Wellington House, 4/10 Cowley Road, Uxbridge UB8 2XW
Compaq 081 332 3000
Hotham House, 1 Heron Square, Richmond TW9 1EJ
Composit Software 0952 595436
10 Leasowe Green, Lightmoor, Telford, Shropshire, TF4 3BR
Compuadd 0272 637488
7 Great Western Way, Bristol BS1 6HA
Computer Manuals 021 706 6000
50 James Road, Tyseley, Birmingham B11 2BA
Computer Mates 0753 631101
Pinewood Studios, Iver Heath, Bucks, SL0 0NH.
Computer Music Systems Ltd 071 482 5224
5-7 Buck Street, London, NW1 8NJ
Computers By Post 081 760 0014
12 Sutton Lane, Banstead, Surrey, SM7 3QP.
Connect Software Ltd 081 743 9792
3 Flanchford Road, London, W12 9ND
Corel 0703 899321
Xitan, 1-4 Chevron Business Park, Lime Kiln Lane, Holbury, Southampton SO4 1QL
Corporate Upgrades Ltd 081 861 2370
Premier House, 2 Daton Road, Harrow, Middx HA1 2XU
Ctrl-Alt Deli 0908 662759
26 North 12 Street, Central Milton Keynes, Bucks MK9 3BT
Cybernetic Imagination Systems Ltd 0923 252196
21A Church Road, Watford, Herts, WD1 3PY
Datacom 0256 763911
Landata House, Station Road, Hook, Hampshire RG27 9JF
Dataflex 081 543 6417
10/12 Lombard Rd., South Wimbledon, London SW19 3TZ
Dataplex 0753 535557
129 Bath Road, Slough, Berks, SL1 3VW
19 High Street, Old Town, Swindon, Wilts SN14 4EG 0793 488448
Datel Electronics Ltd 0782 744707
Govan Road, Fenton Industrial Estate, Fenton, Stoke-on-Trent, ST4 2RS
Datel London Shop 071 580 6460
222 Tottenham Court Rd, London W1

DEALER DIRECTORY

MICROCOMP DEVELOPMENTS
UNIT 47 INSHOP
WRIGHTSON HOUSE
THORNBY
STOCK-ON-TEES
CLEVELAND
TF17 9EP
TEL : 0642 764199

PV COMPUTERS
104 ABBEY STREET
ACCRINGTON
LANCS
TEL : 0254 35345

CHIPS GAMES CENTRE
CLARK YARD
DARLINGTON
CO DURHAM
TEL : 0325 381048

CHIPS
7 Dundas Street
Redcar
TS10 3AD
Tel : 0642 488522

DEALER DIRECTORY

LOGIC SALES

50 LYNTON PARADE
CHESHUNT
HERTS
EN8 8L8

TEL : 0992 25323

Pudsey Computers Shop

161 Richardshaw Lane
Pudsey
Leeds
LS28 6AA

Tel: 0532 360650

INVICTA SOFTWARE

49 QUEENSROAD
HASTINGS
SUSSEX
TN34 1RE

Tel : 0424 444515

Data Day

51A Farringdon Road
Swindon
Wilts
SW1 5AR
Tel : 0793 512073

Dell Computer Corporation 0800 414535
Millbank House, Western Road, Bracknell, Berks RG12 1RW
Diamond Computers 071 580 4355
232 Tottenham Court Road, London, W1.
Digital Music 0703 252131
27 Leven Close, Chandlers Ford, Hants, SO5 3SH
Dimension Computers Ltd 0533 517479/621874
Dimension House, High Street, Leicester, LE1 4FP.
Dowty Information Systems 0635 33009
Newbury Business Par, London Rd., Newbury, Berkshire RG13 2PZ
DS Computers 071 281 5096
Unit 206, Belgravia Workshops, 157 Marlborough Road, London, N19 4NF.
Elonex 081 452 4444
2 apsley Way, London NW2 7LF
Epson 0442 61144
Campus 100, Maylands Avenue, Hemel Ehmpstead, Herts, HP2 7EZ
Evesham Micros 0386 765500
Unit 9, St. Richards Road, Evesham, Worcs, WR11 6XJ
FMG Ltd 0733 371304
Newcombe Way, Orton Southgate, Peterborough PE2 6SF
GST 0480 496789/496666
Meadow Lane, St Ives, Cambridgeshire PE17 4LG
Hayes Microcomputer Products Inc 081 848 1858
1 Roundwood Avenue, Stockley Park, Uxbridge, Middx UB11 1AE
Hewlett Packard 0344 369369
Cain Road, Bracknell, Berks, RG12 1HN
Highland Graphix Ltd 0355 264888
18 Albion Way, East Kilbride G75 0YN
IBM 081 747 0747/995 7700
Freepost, London W4 5BR
International Data Systems 071 436 2244
37-41 Gower Street, London WC1E 6HH
Intraset Ltd 0257 276800
10 Woodside Ave, Clayton-le-Woods, Chorley, Lancs, PR6 7BR
Iolo Davidson 0453 860872
Scrubbetts, Bagpath, Tetbury, Glos GL8 8YG
Kalamazoo 021 411 2266
Mill Lane, Northfield, Birmingham B31 2RW
Kodak 0442 61122
PO Box 66, Station Road, Hemel Hempsted, Hertfordshire HP1 1JU
KSI 0590 644255
Unit 1, Braxton Courtyard, Lymore Lane, Milford-On-Sea,
Lymingtyon, Hants SO41 0TX
Logitech 0344 891313
Hawes Hill Court, Drift Road, Windsor, Berks SL4 4QQ
Longman Logotron 0223 323656
Dales Brewery, Gwydir Street, Cambridge CB1 2LJ
Lotus Development (UK) Limited 0784 455445
The Causeway, Staines, Middlesex TW18 3AG
Mannesman Tally 0734 788711
Molly Millars Lane, Wokingham, Berks RG11 2QT
Maplin Electronics 0702 552911
PO Box 3, Rayleigh, Essex SS6 8LR
Megatech 081 874 6511
111/113 Wandworth High Street, London SW18 4HY
Memory Direct 0252 316060
33 Grosvenor Road, Aldershot, Hants., GU11 3DP
Microsoft Technology Limited 0734 270000
Excel House, 49 De Montford, Reading, Berks RG1 8LP
Microtext 0705 5956947
Birdlip Close, Horndean, Hants, PO8 9PW
Mindscape International Limited 0444 831761
The Coach House, Hooklands Estate, Scaynes Hill, W Sussex RH17 7NG
Miracom 0206 844834
Premier House, Telford Way, Colchester Business Park, C, Ess CO4 4QP
Mitsubishi Electric UK Limited 0707 276100
Travellers Lane, Hatfield, Herts AL10 8XB
Naksha 0925 56398
29 The Wharf, Warrington, Cheshire WA1 2HT
NEC 0800 181368
1 Victoria Road, London, W3 6UL
Newbury Data 0784 461500
Hawthorne Road, Staines, Middx TW18 3BJ
Newstar International 0245 265017
The Widford Old Rectory, London Road, Chelmsford, Essex CM2 8TE
NextBase Ltd 0784 460007
Unit 18, Central Trading Estate, Staines, Middx, TW18 4XE
Olivetti 0908 690790
1 Deltic Avenue, Rooksley, Milton Keynes MK13 8LD
PC Services 081 658 7251
40 Rowden Road, Beckenham, Kent BR3 4NA
Pace Micro Technology 0274 532000

Victoria, Saltaire, Shipley BD18 3LF

Panasonic 0344 853915
Panasonic House, Willoughby Road, Bracknell, Berks RG12 8FP

Philips & Pye 081 689 4444
City House, 420/430 London Road, Croydon CR9 3QR

Picture Perfect UK Ltd 0264 333643
Honeysuckle Cottage, Green Meadow Lane, Goodworth, Clatford, Andover SP11 &HQ

Power Mark 081 951 3355
Premier House, 112 Station Road, Edgware, Middx, HA8 7AQ.

Precision Software 081 330 7166
6 Park Terrace, Worcester Park, Surrey KT4 7JZ

Prestige Network Ltd 0276 60073510
Reynolds Green, Camberley, Surrey, GU15 4FL

PC-Sig Uk 081 877 1103
111/113 Wandworth High Street, London SW18 4HY

Psion 071 262 5580
85 Frampton Street, London NW8 8NQ

Quarterdeck 0245 496699
The Widford Hall, Widford Hall Lane, Chelmsford, Essex CM2 8TD

RDN Datasystems Ltd 0424 752288
PO Box 44, Hastings, East Sussex, TN34 2SY

Reeves PLC 0604 671277
Technology House, 75 Tenter Road, Hanson Business Park,
Moulton Park, Northampton NN3 1PZ

Response Computer Maintenance Limited 081 965 3225
Rays House, North Circular Road, London NW10 7XB

Roland UK Limited 0252 816181
Rye Close, Ancells Business Park, Fleet, Hampshire GU13 8UY

RSC Corporate Computing 0923 243301
75-77 Queens Road, Watford, Herts, WD1 2QN.

Samsung 081 391 0168
Samsung House, 225 Hook Rise South, Surbiton, Surrey KT6 7LD

Sanyo 0923 246363
Otterspool Way, Watford TD2 8JX

SA Software 081 998 2351
28 Denbigh Road, London W13 8NH

Seikosha 0753 685873
Unit 14, Poyle 14, Newlands Drive, Colnbrook, Berks SL3 0DX

Serif (Europe) Ltd 0602 421502
PO Box 15, West PDO Nottingham NG7 2DA

Sharp 061 205 2333
Sharp House, Thorpe Road, Newton Heath M10 9BE

SMC Computers 0573 550333
26 Farnham Road, Slough, Berks SL1 3TA

Softsel UK 081 568 8866
Softsel House, 941 Great West Road, Brentford, Middx

Software Paradise 0800378873/0222 887521
Avenue House, King Edward Avenue, Caerphilly, Mid Glam CF8 1HE

Symantec 0628 776343
MKA House, 36 King Street, Maidenhead, Berks SL6 1EF

Tandy 0922 710000
Tandy Centre, Leamore Lane, Walsall WS2 7PS

Technomatic 081 205 9588
Techno House, 468 Church Lane, London, NW9 8UF.

Time 0254 691822
Time House, Devonport Road, Blackburn, Lancs, BB2 1EJ

Total Control (UK) Ltd 0488 685299
Unit 3, Station Yard, Hungerford, Berks, RG17 0DY

Toshiba 0932 841600
Weybridge Business Park, Addlestone Road, Weybridge, Surrey KT15 2UL

Triumph Adler 0206 845251
Ipswich Road, Colchester, Essex CO4 4EG

UK Home Computers 0793 695034
Unit 22, Cheney Manor Industrial Estate, Swindon, Wilts, SN2 2PJ

Unimart Computers Ltd 081 893 8161
2 Popes Court, Popes Avenue, Twickenham, Middx TW2 5TR

Victor Technology 0494 461600
Unit 1, Valley Centre, Gordon Road, High Wycombe, Bucks HP13 6EQ

Watford Electronics 0923 237774/233383
250 Lower High Street, Watford, WD1 2AN.

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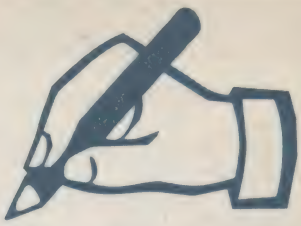

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PC Review

Introducing shareware

Although shareware has been in existence for several years, many PC users are unclear as to exactly what it is.

There is such a wide choice of software these days that it can be very difficult and costly to choose the right program for an application. The only realistic way to know whether a program is suitable is to try it out first. With shareware you can do just that.

The basic principle is that users can obtain shareware programs for just a few pounds from an authorised shareware vendor. If they find them useful, they are asked to make a payment, directly to the author and register themselves as a user. By registering, they can expect printed manuals, updates and technical support from the author.

The amount and level of support required and documentation depends upon the complexity of the program.

The registered version of a game, may , for example, be just £5 but a full Business Finance package could be £125 or so.

However in most cases, the registered version is likely to be considerably cheaper than the equivalent commercial program.

Of course, if a program is not found suitable, the user just re-formats the disk and uses it for something else.

Shareware software is NOT public domain. It is copyright software in the same way as any regular commercial program is – it's the method of promotion and distribution that differs.

Public domain software is where the author has relinquished his or her copyright permitting others to distribute the software. There is no request for payment from the author.

ABOUT THIS REVIEW SECTION

The purpose of this section of PC Review is to offer concise but informative reviews of what we believe to be the best programs in each respective category.

We offer a points out of ten score based on three criteria:-

1. How well does it perform the task?
2. How easy is it to use, particularly in terms of getting started?
3. Understandable documentation and help files.

Each review identifies the name of the program, author and the registration fee, where known.

In popular fields there are often many different programs available to cover a particular function. In these cases the standards are very high and consequently the rating is higher. There would be no point in offering you a sub-standard program in a well-served category.

However, in more specialised fields, there will be relatively few programs available so there may be cases when a lower rating will have to be tolerated as there is no better alternative.

Shareware programs may be obtained from a variety of sources. However, for your convenience, we have arranged that all programs featured in this review may be obtained from one source – Advantage which is a well-established, authorised shareware mail order company, based in Cheltenham.

PC Review readers can order their disks directly from Advantage either by phone, fax or post and can expect fast delivery.Advantage will also provide getting started support and advice.

As a special offer to PC Review readers, Advantage is offering a 25% discount on its regular price of £3 a disk – quote PC Review when calling or use the special priority order form at the end of this section and get your disks for just £2.25 each (both 5.25" and 3.5") including VAT.

WHICH COMPUTER?

There are so many varieties of computer and operating system (DOS) around today we cannot guarantee that all programs will work on all computers. However most programs run on a 512K RAM PC compatible running MS-DOS version 2.0 or above. A single floppy drive is usually acceptable but a dual drive or hard disk is more beneficial not just for these programs but for most of your other work as well.

A code is placed by each program if the minimum requirement is more than a basic PC compatible with a Hercules mono monitor:

CGA: Colour Graphics Adapter required with Colour Monitor.
EGA: Enhanced Graphics Adapter required with high resolution monitor.
VGA: Video Graphics Array required with high resolution monitor.
HD: Hard Disk Drive required.

Mono and CGA programs will run on an EGA or VGA monitor. Also, many CGA programs will run on a mono monitor if you load a CGA emulator program (also available as shareware).

Programs are written by a USA author unless otherwise stated.

Programs which make use of a printer expect to find an IBM or Epson-compatible. Most modern printers are.

If you have any questions about shareware or wish to discuss your requirements please call Advantage (not PC Review) on (0242) 224340.

SHAREWARE REVIEWS

PERSONAL ORGANISERS

Calendar Mate (one disk)

Author: Hawk Software
Registration: $22.
Performance: 8/10
Ease of Use: 7/10

Calendar Mate is designed to create personalised calendars. The user defines events to the program and it will display them on the calendars when printed.

There are three types of calendars that can be printed – a monthly block calendar, a one page yearly calendar and a daily appointment calendar/scheduler. The monthly calendar can display up to three events per day.

In addition to the attractive printed calendars, Calendar Mate's can handle different types of repeating events - simple intervals such as 'yearly' or 'weekly' or 'third Monday of the month' or 'Wed-Fri' for example. It can even delete or reschedule single occurrences of a repeating event.

Defining events to the system is a simple task. Much effort has been invested in making the program intuitive and user friendly. There is context sensitive help available anywhere in the program.

As well as the simplicity and ease of use built into the program there are several powerful features including automatic computation of Easter and lunar cycles, mouse support, optional Julian dates, automatic event repetition. calendars can be printed in English, French, German or Spanish.

STOCKS AND SHARES

Noyes Investment Ledger (one disk)

Author: James Noyes
Registration: £18 UK
Performance: 7/10
Ease of Use: 7/10

The author has produced an investment program which is fairly easy to use. It is assumed that you have been using manual records so far and know a little about book keeping.

Data is entered on to a main input form on the screen. Once you have mastered this part of the program, the various reports will keep a good control over your investment portfolio.

The author is an accountant who has spent many years sorting out manual and computerised accounting problems and is therefore well suited to creating a program which is appropriate to the task without confusing the user with jargon and complex setting up procedures.The Investment Ledger features analyses of purchase and sales of investments, calculates the profit and losses and analyses cash payments and receipts.

There is also a bank reconciliation facility, memorandum database, and several reporting functions. It can handle up to 99 cash/bank accounts, 999 nominal ledger headings and a maximum value of posting currency of £100 million which should prove more than enough for most investors!

DESK TOP PUBLISHING

Rubicon (two disks)

Author: Rubicon Computer Labs Inc
Registration: $89
Performance: 9/10
Ease of Use: 7/10

The Rubicon Publisher is a professional standard system which can be used to publish high quality documents from text files which have been previously prepared in plain ASCII format using any suitable word processor or text editor.

It is a serious desk-top publishing program, not really designed for beginners; but if you can use a word processor, you can install and use the Publisher successfully, provided that you read and follow the instructions, and pay reasonable attention to detail when preparing text files for publication. It will enable you to produce a wide variety of documents, forms, notices, advertisements, newsletters, reports, financial statements, leaflets, brochures, book-length projects, etc, with typesetting of professional quality and standards.

In short, it's a very useful program: and it's also more fun than most video games, because its creative possibilities are limited only by your imagination. Rubicon does not offer any graphic image importing or editing functions. These are best undertaken as a separate activity using, for example, Desktop Paint and incorporated into your documents by manual methods if required.

SignSmith (one disk)

Author: Brian Smith
Registration: None Required
Performance: 6/10
Ease of Use: 7/10

SignSmith is not particularly sophisticated but on the other hand it is not difficult to get it working and, if you want to just produce a simple A4 poster or a letterhead for your business then it is eminently suitable. There is plenty of on-disk documentation and technical details for those who need it.

Signsmith works on any piece of text which has been created on a Word Processor – as long as it is in regular ASCII text format- (ie no control codes). You then add text and numerical codes in your document each time you require a change of font or size of lettering.

Then you just run the SignSmith program and it will print out the final document on your dot matrix printer. It uses graphics mode as do all other DTP programs, so will take longer than ordinary text.

The program has four fonts available, font 1, 2, 3, and 4 which are progressively more fully-formed. Normally you will prefer fonts 3 or 4.

Font 4 is the best, but the basic height of font 3is only half that of font 4, so that you have more choice in the size of font 3 (and font 2). Font 1 is really of use only if you are deliberately after a chunky 'computer-like' effect.

Early Bird

Author: Allan Computer Products
Registration: $30
Performance: 8/10
Ease of Use 8/10

There are several programs available which offer desktop diary and appointments functions. Most of them are 'memory-resident' ie they are available at the touch of a key, while you are in the middle of another application eg your WP or Accounts.

Early Bird is probably one of the best user-friendly, full-featured reminder and calendar program available.

It features simple or complex reminder types (e.g., third from the last Thursday of every 9th month), desktop calendar and scan (AUTOEXEC.BAT) modes, colour pull-down and pop-up menus, context sensitive on-line help, alarm, DOS shell, mouse support, file manipulation commands, and selectable group printing.

In addition, Early Bird offers user definable classes, notice, print, colour and display options, special sound and visual effects and reminder creation defaults. Once you try it, you'll never stop

Print Partner
(one disk)
Author:
Robert Bequette
Registration: $20
Performance: 9/10
Ease of Use: 9/10

Print Partner is three programs in one, each fully menu-controlled and very easy to operate. It will produce printed banners, signs, and calendars for any year/month. You can also save and reload any of your compositions for later use.

First,Banner prints text of your choice on a roll of paper with letters about six inches high. You can have a graphic on either end and use any font you require. Print Partner attempts to smooth the text and graphics to make them look better.

Next, Sign, usually the most popular function, produces an A4 sheet containing lines of text each of which can be printed again with your choice of font. Signs may have any number of two different graphics you select and may be placed anywhere on the page.

Third, Calendar, prints an A4 size desk top or wall-mounted monthly calendar with a box for each day to fill in manually as required, for any month from 1980 to 2098, with the month name in any font you select. Print Partner can be configured for most printers and comes with a varied interesting set of fonts.

Typesetter
(two disks)
Author:
XLent Software
Registration: $30
Performance: 8/10
Ease Of Use: 7/10

Typesetter PC is a page layout program that gives you "What You See Is What You Get" capability in designing a single page and prints it out in the highest resolution achievable on a 9-pin dot matrix printer. Fonts can be italicized, inverted, made bold and more and, along with graphics, can be mixed anywhere on the page.

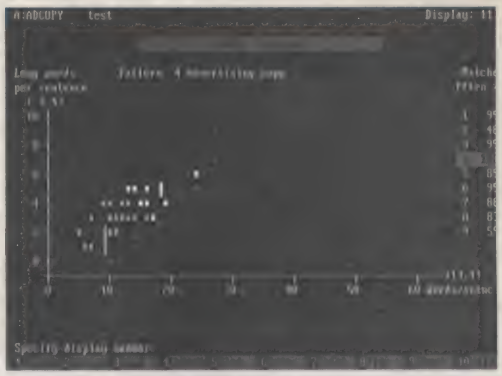
Typesetter is a fully featured graphics program including such tools as pencil, k-line, circle, rectangle and spline. There are many on-screen help menus that list these functions.

A CGA and Hercules version of Typesetter PC are released as shareware which allow you to use proportionally spaced fonts as well as flip and inverse sections of the page. Typesetter is able to produce output which in many cases can be substituted for pages created with an expensive DTP system.You can create custom sized printouts for labels, business,index and Rolodex cards.

One of the best features is the ability to generate Near Laser Output. With this option, Typesetter can produce a page with 1920 x1392 pixels. That's 2,672,640 pixels – the absolute limit of the Epson FX 80 and compatible printers!

So is it a DTP? Well the answer depends on what you are trying to do. For a commercial quality magazine with scanned images and wrap around text you still need a 200+ program and all the hardware to go with it but for letterheads, posters, labels, flyers, club Newsletters or infosheets printed on a dot-matrix, Typesetter is great.

Readability Plus (one disk)
Author: Scandinavian PC Systems
Registration: $25
Performance: 8/10
Ease of Use: 9/10



Don't confuse Readability Plus with grammar and style checkers. It starts where those programs leave off. In fact, most users have a fine command of the English language and don't need grammar checkers.

Grammar checkers correct many grammar and word usage errors. And they'll let you stipulate how strict you want those grammar rules applied through the selection of what they call business, technical and personal 'styles'.But their definition of style applies to word usage, not writing rhythm and word and sentence cadence.

In contrast, Readability Plus assumes that what you've written is mechanically correct. Rather than look for errors, it looks for sentences and words that aren't appropriate for your intended audience and purpose - those things that make writing boring and unintelligible to the reader. Compare your text with any of the nine writing style models provided with the program. 'Align' the style of your draft with the model's so that they're indistinguishable.

Whether you want to want to write love letters that read like advertising copy (not such a daft idea!), or technical papers that read like well-crafted magazine articles, Readability Plus gives you the writing edge that only other Readability Plus users enjoy!

Readability Plus really works!

It produces graphical and statistical analysis of any passage which can be tested under a wide variety of categories – newspaper, technical, magazine article, novel etc.

HOME FINANCE

Home Accounts
(one disk)
Author: Blackwood Software UK
Registration: £10
Performance: 8/10
Ease of Use: 8/10

How many times have you received your monthly statement from the bank, showing a final balance of lots of money, only to find that the last half dozen cheques you wrote out have not been cashed yet? Here's a solution to end this confusion for once and for all.

With Home Accounts you can keep an up to date record of your account(s). You can enter all your Standing Orders and Transfer them to your monthly account when due.

At the end of each month, the final balance can be carried forward as the starting balance for the next month. A full breakdown of your monthly expenditure is available at the press of a key.

The program also includes Loan Calculator which works out the total interest on a given amount, and will display the monthly and weekly payments required to pay the loan in the given time.

The third feature in this program is Mailing List. All you have to do is enter the Names and Addresses into the database.

When you want to print out a Name and Address, just select the Name you wish to print, enter the size of envelope you are using and the program will do the rest. Your Name and Address will be centred on the envelope.

Checkmate Plus
(two disks)
Author: Custom Technologies
Registration: $15.00
Performance: 8/10
Ease of Use: 7/10

One of the most popular uses of a home computer is in the control and monitoring of domestic finances. These can range from a straightforward 12 month breakdown of incoming and out going monies through to a mini-accounts package offering detailed analyses and reports.

Checkmate Plus falls more in the latter category, however. It is sufficiently well-presented and well-documented to be used in any simpler application. You don't have to make use of the more advanced features initially or at all. The strength is that the more powerful features are there to be used as you gain confidence and explore the potential of the program.

CheckMate Plus is a full-featured, easy to use,cheque book-based accounting package. It is a real accounting package, with real double-entry transactions. You can produce true balance sheets and income statements as well as numerous budgeting and graphical reports.

CheckMate Plus is intuitive,

easy to use, and has extensive on-line help. To use the more sophisticated features you will need the user's guide to fully exploit its power. It comes with a disk-based introductory user's guide to aid you in evaluation. This is quite large.

Household Register (one disk)

Performance: 7/10
Ease of Use: 8/10

Most people have no real idea of the value of their possessions.Whilst this may not be important most of the time, should a disaster strike and they need to fill in a wad of forms for their insurance claim, it can often be difficult to persuade the insurance company of the full value of your things.

So, before a problem occurs it is wise to take an inventory,- itemising all your goods and chattels and attaching their value. What better way to do this than on your PC?

Household Register is a fully equipped database system specifically tailored to log all your household possessions with their corresponding values, analyse the data and produce valuation reports and statistics.

You can use the reports to initiate your insurance assessment and present it to the insurance company along with any claims you may need to make.

HOME MANAGEMENT

The Librarian System

Author: Peter Richards
UK Registration: £19.95
Performance:8/10
Ease of Use: 8/10

The Librarian is a suite of tailor-made database systems developed for a variety of household applications. Each application is available on its own disk: Librarian: club membership; Librarian: home insurance; Librarian: record collecting; Librarian: audio cassette; Librarian: address book; Librarian: video collecting;Librarian: gourmet cookbook;Librarian: military aircraft

Librarian: book collecting; Librarian: hit singles.

The programs have common features throughout the range of titles.These include fast file access search and edit customised database managers. Each has report and print facilities and additional features are available on the registered versions.

Menu selection is minimised and data entry is a simple case of filling in a form on the screen. Once the data is entered it may be sorted, searched and edited. The shareware version offers a report printout of the records entered. The registered version offers a wider range of reporting functions.

The Librarian System is professionally written using the latest programming tools. Presentation is neat and tidy and very easy to understand.

Home Video Library

Author: Turbo Systems
Registration: $34.95
Performance: 8/10
Ease Of Use: 8/10

Home video recording has been popular for many years now and most of us have accumulated an assortment of anonymous looking tapes containing anything from unrepeatable family movies, through a seriesof old films taped off the TV, to old and totally expendable early episodes of Home And Away.

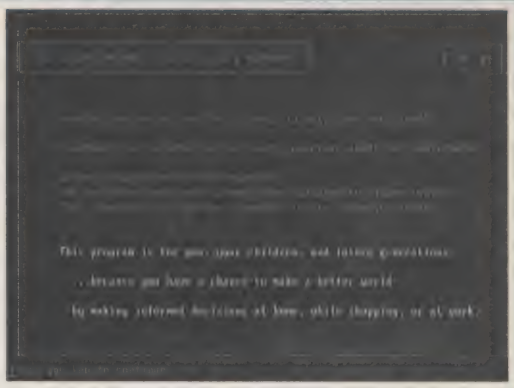
In most cases the labels, if we wrote any at all, have faded or peeled off and not only can you not find anything but also you run the riskof wiping out those precious recordings.

With your PC and the Home Video Library program you can get things organised properly.

Working the program and entering data is intuitively easy. Once you have entered in the basic details, you can quickly search your video library files and print reports to the screen, printer or a disk text file. You can also print labels to place on tapes for easy identification.

Green Consumers Sourcebook (two disks)

Performance: 7/10
Ease of Use: 9/10



The concept of "paperless books" is becoming more and more popular and with the advent of nice clear graphic screens and fast disk access reading and learning from your PC becomes an attractive proposition. Also, books on a disk often work out cheaper than the printed and bound variety.

This book is presented using a system called IRIS which is database orientated, thus providing a variety of fast search and retrieve functions. Any part of the book can be printed out. The book covers a wide range of subjects on topical Green issues and makes very interesting reading as well as being a useful reference.

LIFESTYLE

Elvis Presley's Guide to the Universe (one disk)

Performance: 6/10
Ease of Use: 9/10

Another of the new books-on-a-disk. This one is rather more off the wall, though.

Apparently Elvis is still communicating his views to the world via the person who has put this book-on-a-disk together. Makes fascinating reading but can you believe any of it?

MUSIC

Music Maestro (one disk)

Author: Peter Richards
UK Registration: £19.95
Performance: 7/10
Ease of Use: 8/10

Whilst there are many database 'shells' on the market which allow you to design and build your own database manager, many users, particularly newcomers to the PC would prefer it if someone else had done the work for them.

The UK author had the new user in mind when he designed Music Maestro. Most people have a collection of music records – whether they be on vinyl LP, compact disc or tape.

As the collection grows it can be a great help to catalogue them all in a methodical way, entering information such as title, artist,duration, date issued, date purchased, location etc.

Taking the typical requirements the author has designed Music Maestro, ensuring at all times that the program is simple and easy to use.

Menu selection is minimised and data entry is a simple case of filling in a form on the screen. Once the data is entered it maybe sorted, searched and edited. The shareware version offers a report printout of the records entered. The registered version offers a wider range of reporting functions.

Musician's Toolbox (one disk)

Author: D T Richards
Registration: £10
Requires EGA or VGA

The Musician's Toolbox combines these functions:-

The Chord Analyser provides the musical spelling of the chord symbol sprinted on most sheet music. The relevant notes are sounded and displayed graphically on a simulated keyboard. Accepts a variety ofstyles of chord symbols and no difficulty should be experienced on this account.

Guitar Chord Dictionary. By pressing the space bar after using the keyboard Chord Analyser, a graphical display of the equivalent chord shape for guitar may be obtained. Three alternative possibilities are given which may vary in suitability depending on the current

playing position on the guitar neck, the degree of proficiency of the player,etc.

Ear Training. Most musicians are aware of the importance of ear training (particularly in improvised music). This is also a requirement in the examinations of the Associated Board of the Royal Schools of Music and similar bodies. This module plays random intervals and requires the student to select the appropriate description.

Metronome provides a usable metronome, supporting all practical tempos and any time signature in either simple or compound time. The audio output is accompanied by a matching visual display.

Transposer provides an instant reference for transposition of notes between any two keys. As the transposition is shown for the entire chromatic scale (so allowing for the inclusion of accidentals) it is irrelevant whether the key is major or minor. For this reason, only the tonic note of the key should be entered (e.g. "G" rather than "Gminor" or "Gm").

Instrument Information provides details of the range and usability of all the most common instruments of the orchestra This information is indispensable to musicians who wish to arrange for ensembles of instruments with which they may not be wholly familiar.

GENEALOGY

Gene Genie

(two disks)
Author:Mike Allen
Registration: $39.95 (UK)
Rating: 8/10
Performance: 8/10
Ease of Use: 7/10

Interest in one's personal family history has always been a fascination and it continues to be a popular hobby. Before the advent of computers collating research was a very time-consuming and repetitive task, particularly when alterations and amendments had to be made.

Computers are ideal tools for the entry and re-organisation of information and so several programs have been specially written on genealogy and family history.

Gene Genie is a good example and it is written and supported by a UK author. It is more of a family history program, ie, it offers more space for text descriptions of each subject but it does not produce graphic family tree pictures.

It includes facilities to enter in all the standard genealogical details of the family: a unique record number,surname, forenames, maiden name (if applicable), sex, identity of father, identity of mother, date and place of birth, date and place of baptism, date and place of marriage(s), date of divorce (if applicable), date and place of death, whether buried or cremated, date and place of burial/cremation.

Other features include addresses, occupations, sources,- navigation tree, personal notepad. On the registered version you get hard copy printouts for either an individual or the complete database.

A detailed tutorial is supplied on disk to help newcomers to this popular hobby. The shareware version limits the number of entries.

Trees II

(one disk)
Author: Tomorrow's Designs
Registration: £49.95
Performance: 8/10
Ease of Use: 8/10

In some families, there already exists a wealth of information, stored in various forms, just waiting to be ordered and examined. In others, records are patchy. Tracing further into the past involves careful investigation, following clues, hunting through public records for new leads.

The science and art of investigations, (and it has all the attributes of both), is genealogy. Investigating your heritage produces vast amounts of data, and the genealogist must find ways of recording it, then correlating it to discover the stories that lies behind it.

Trees has been designed to aid the genealogist so as to make his or her job as simple and as fun as possible. While requiring no great specialist knowledge about either computing or genealogy, it nevertheless has all the power and scope of other fully professional genealogical software.

We are all proud possessors of a heritage that goes back to the dawn of recorded time and beyond.

Our ancestors have many tales to tell, can we but find them. And having found them, what better way to manage the information than with your PC?

Brother's Keeper

(three disks)
Author: John Steed
Registration: $40
Performance: 9/10
Ease of Use: 8/10

Brother's Keeper is a set of programs which will help you organise your family tree information, and which will print the information in several ways.

You will be able to print descendant charts which show how anyone named in your file is related to everyone else. You may also print ancestor charts, family group sheets, alphabetically-ordered name lists, descendant trees, lists of birthdays, and customised reports.

For each person entered in the file you may include a date of birth, a date of death, and three other significant dates and you may store a place of birth, a place of death, and a place for three other noteworthy events. You also may enter two additional fields for any other events or information you feel is relevant, the subject matter for which you may define.

Each person can have up to seven message lines of additional data, or a text file of unlimited size containing notes and addenda. Each person may have up to eight marriages stored (enough, even, for Elizabeth Taylor). Each marriage record can hold a marriage date, a place of marriage and one additional date and place,and can store up to 24 children.

Brothers Keeper is a very comprehensive system which offers all the features required by the average genealogist. It therefore comes highly recommended.

PUZZLE CORNER

Cipher

Author: Nels Anderson
Registration: $15
Performance: 7/10
Ease of Use: 8/10
Monitor Type: VGA/EGA/text mode (colour or mono); best on VGA/EGA
Mouse: Yes (optional; VGA/EGA modes only)

Cipher is a crypto-quotes type game, updated to support hi-res EGA and VGA graphics and mouse play. It includes many puzzles to solve plus options such as help, hints, save/restore, etc. You can also create your own puzzle files. All game play can be done with a mouse or with the keyboard according to the players preferences.

The objective of Cipher is to solve a word puzzle. You must try to discover the real meaning of a quotation or other phrase that has been encrypted.

Also available from the same author – Cipher for Windows. Just like regular Cipher, only this runs under the Microsoft Windows 3 environment. It includes standard Windows help with complete game instructions.

Crossword Creator

(two disks)
Author PC HelpLine
Registration $20
Performance 8/10
Ease Of Use 8/10

This is just the program for anyone who has to design crosswords in a hurry – whether it be for your own family entertainment or for your village Newsletter, magazines etc.

There are two approaches to adopt. First you can design your own grid, enter the words and create the clues. Helpful features include a Word Finder which makes use of a list of words on the disc that you can supplement or replace with a bigger list.

Second you can cut the development time by getting the Automatic function of Crossword Creator to design and build up the crossword for you.

Crosswords can be as big or small as you like, within the constraints of your printer and are printed out neatly.

The disc includes a useful selection of ready-to-run crossword puzzles and the program has extensive on-line help. It can also be controlled by a mouse. Great fun!

HOBBIES & PASTIMES

The Gardener's Assistant (one disk)

Author: Shannon Software
Registration: $25
Performance: 6/10
Ease of Use: 9/10

Most hobbies and pastimes are enhanced by sourcing information on the subject and getting things better organised. As with most things,the PC can come in handy.

Not much software has been written on the subject of gardening, Landscape Plants (reviewed earlier) and this one, Gardener's Assistant, are about the only two we know of. They are American and therefore some of the plants and weather conditions are not applicable to the UK but most of the information is still relevant.

Gardener's Assistant was designed to help gardeners plan and plant their vegetable patch and obtain optimum performance from the soil they use, the seeds they plant and the seasons.

It works on both mono and graphic display adapters but not on Hercules. The graphic adapter displays are more flexible.

Registration entitles you to a copy of the 60 page manual,notification of up-dates, and reduced price upgrades.

AMUSEMENTS AND DIVERSIONS

Speech Synthesiser (one disk)

Author: Andy McGuire
Registration: None
Performance: 5/10
Ease of Use: 9/10

The sound chip and loudspeaker on the average PC is fairly basic only offering a single note at a time of variable pitch and duration. It was never intended to be more than a beep. This of course invoked a major challenge to software writers and they have managed to produce polyphonic music, sampled sound and, in the case of this program – speech!

Whilst the reproduction is still crude you can just about discern the words and, although the program has little practical value, it makes for both an interesting exercise in programming and a fairly light-hearted piece of entertainment.

The versions of speech to be found on this disk have been modified to produce versions for computers at various speeds. For example SPEECH8.COM sounds right on an 8MHz PC clone (w/ V20chip).

Shakespearian Plays

Author: T Fanning
Registration: £5 per play.
Performance: 8/10
Ease of Use: 9/10

Now you can have the complete works of the bard himself on your PC. Suitable for straightforward reading, printing out or, used for reference in conjunction with essays and tutorials.

Each play is supplied on its own disk with an attractive Playread program which lets you select the act and scene of your choice. The text is neatly presented and easy to read. Search and find is rapid.

Choose from: Anthony and Cleopatra, Merchant of Venice, As You Like It, Midsummer Night's Dream, Hamlet, Julius Caesar, Othello, King Lear, Macbeth and Taming of the Shrew.

Suitable for teachers, students, theatre directors or anyone interested in these great literary works.William himself would have been pleased with the idea..

FOOD AND DRINK

Vino: File (one disk)

Author Mark Christian
Registration $25
Performance 7/10
Ease Of Use 8/10

Now that the price of wine is relatively low and we are able to obtain an ever increasing range of products, even at the local supermarket, many people are building up their own "wine cellar" and experimenting with the many varieties available. As with anything it becomes increasingly difficult to remember what different wines were like and whether you liked them or not.

VINO: FILE is a good PC-based method of getting the information organised. It will manage your wine cellar and log your tasting notes.You can analyse your cellar by variety, year, origin, peak drinking period and location. You can also identify future purchases.

VINO: FILE helps you maintain inventory of your collection, locate wines, enter tasting notes using windows and pull down menus. It includes a neat Cross Reference facility, help screens, on-disk manual and sample files.

VINO: FILE features a flexible database manager for report printing functions, Import/Export, Un-delete and fast search and sort.

Edna's Cook Book (one disk)

Author: Specialty Microware
Registration: $29
Performance: 7/10
Ease of Use: 8/10

Edna's Cook Book is for recording, filing, listing, and printing recipes. Essentially, it is the equivalent of the cookbook in which you now keep all your recipes, except that it is electronic.

The program may also be used in the preparation of cook books for publication, since it facilitates organisation and printing.

If you can type, you no longer have to deal with disorganised slips of paper and clippings thrown together in a drawer or box,only to be frustrated when you can't find that particular recipe that you remember you had, except you can't remember where it is,or what the precise name of it is.

Edna's Cook Book will take care of the tedious part, so you can get on with the real work. Good cooking.

The only thing we are not told is who Edna is!

Kim's Kitchen (two disks)

Author: N/A
Registration: N/A
Performance: 8/10
Ease of Use: 8/10

Kim's Kitchen is more than a recipe management system. It features a fully operational database system of items and recipes from which the user can create menus, shopping lists and stock control management.

It is a useful tool for both the home cook and professional restaurateur and eliminates much of the drudgery in maintaining stock levels and creating shopping lists (or purchase orders).

The program contains an alarm, a note pad, a calculator, a conversion table and context sensitive help, all accessible by function keys.

Recipes are a set of quantities of items with instructions.Menu plans are a set of recipes and items, while your shopping lists can be created from either items, recipes, menu plans,stock levels or any mixture of the above.

There is a very comprehensive set of report handling features to complement the functionality of Kim's Kitchen.Supplied with the software are example databases and indexes.

HUMANITIES

Geoclock (one disk)

Author: Joseph R. Ahlgren
Performance: 7/10
Ease of Use: 8/10

Geoclock is a useful tool for geography students, astronomers or anyone interested in world time zones.

It shows the current time (based on the system clock) with a map of the earth. The current sun position is displayed with a crossed circle, and the part of the earth in sunlight is highlighted.

This display is automatically updated every second (for an 8 MHz AT with an 80287) to 20 seconds (for a 5 MHz PC without an 8087). Local sunrise, sunset, and the sun's azimuth and elevation are also displayed. A variety of map backgrounds and other options are available.

There are two versions of Geoclock. The first is designed to support computers with a 256K EGA or VGA board with a compatible colour monitor.

The second supports CGA, Hercules, MCGA, AT&T 400x640, and PC3270 graphics, all in the highest resolution monochrome mode available for that card.

MapMaker (one disk)

Performance: 8/10
Ease of Use: 6/10

This program is not really designed for the casual user and is sophisticated enough for professionals and educationalists. The shareware version includes data for the continental USA

MapMaker produces two common forms of quantitative maps;Choropleth (Area Colouring) and Graduated Circle, on an IBM PC colour monitor, and if desired, in black and white on a matrix printer.

Any set of statistical values may be displayed for corresponding geographical areas. Map areas must be comprised of bounded units such as states, counties, census tracts, or areas delineated by the user. On any given map, only one variable is shown for each map unit.

Choropleth maps display statistical variables by using a sequence of colours (maximum of three). Circle maps represent data with proportionately-sized circles. Proper usage of both map forms is discussed in detail later in the manual. MapMaker can also save and later recall screen images without going through the create process.

Directions and suggestions are provided on the screen throughout the program and it is possible for users who have little or no experience in mapping to produce maps. In order to produce statistically meaningful and visually effective displays,- however, users should read the manual thoroughly prior to creating maps.

Given the appropriate data sets, MapMaker has a great variety of applications, including scientific research, governmental planning, business and education.If hard copy is needed, maps can be printed in monochrome on matrix printers, or slides may be taken directly from the colourscreen.

The World About Us (one disk)

Author: Hinh Van Nguyen
Registration: $15.00
Performance: 9/10
Ease Of Use: 8/10
Requires CGA, EGA, or VGA board and a compatible monitor

World Info is not only a useful aid to geography students but also makes an interesting way of finding out more about the world and testing the family's knowledge of countries, capitals and rivers. Of course with recent events some changes are inevitable but this is true of any World atlas.

The program displays on the screen a map of the entire world or part selected from the menu – Africa, America, Asia, Australia, Europe. You then have the options of country names, capital names, information by country, information by capital or information by maps.

The first two of these will ask you the name of the Country or Capital highlight on screen according to the continent you preferred before. The second two will wait for you to type the Country or the capital . After you ENTER, the computer will try to Match your input of the Country or the Capital and display the country name, the capital, population, population/square mile, largest city, area (square miles), languages and religions.

Option 6 has a circle on the screen and waits for you to move. You can use arrow keys or Home, PgUp, End, and Pg Dn keys to move the circle. Press Enter will let you know the Country and Capital names.

Other options available include the 12 Longest Rivers in the World, the 12 highest Mountains, the 12 largest Lakes and Seas.

ASTRONOMY

The Night Sky (four disks)

Author: A C Stevely
Registration: £24.95
Performance: 8/10
Ease of Use: 8/10

The Night Sky is a computer planetarium capable of plotting depending on your disk system, either 24,000 stars to magnitude+7.49, or 45,000 stars to magnitude +8.49.

It is a very easy to use menu-driven program. This program was written by an amateur astronomer who, when he is not looking at the stars, drives a London Transport bus!

He has spent many hours working on The Night Sky, which was originally started as an exercise in programming. Only when it was almost finished did the author think of distributing it as a shareware program by which time it had expanded to four disks.

Users can select from 28 different locations worldwide. If your city is not on the list then you will have to look up the altitude and longitude of your city in an atlas.

For anyone interested in the subject and for serious astronomers this program is a must.Best used on a hard disk.

EXPLORING

Exploring Physics (one disk)

Author: Bruce N. Baker
Registration: $20
Performance: 8/10
Ease Of Use: 9/10

Exploring Physics comprises a suite of programs for secondary school students and covers:

– Classical Physics Menu – Traditional physics formulas.– Relativity Physics Menu – Formulas for velocities approaching the speed of light.– Electrostatics/Dynamics Menu – Formulas involved electricity.– Optics Menu – Formulas dealing with the study of light.– Math Menu – Process vector and quadratic equations.– Conversion/Calculator Menu – Convert units and perform simple math.– Display Information Menu – Formulas and equations displayed.

Each subject is split into a series of sub-categories. For example, Electrostatics/Dynamics covers a) Coulombs Law. b) Electric Field and Voltage Potential by a single particle. c) Series Capacitors. d)Parallel Inductors. e) Parallel Resistors. f) Inductance Defined. g) Parallel Plate Capacitance.

The subjects are handled well and this disc comes highly recommended

Great Explorers (one disk)

Author: Solaris Systems
Registration: $10
Performance: 8/10
Ease Of use 9/10

With the price of books constantly rising and the cost of computer discs falling it is becoming increasingly cost effective for publishers to put out their work on a disc format instead.

Most systems contain the original text files and a piece of software to display it a screenful at a time. You can use the cursor keys to move up and down and usually there is a fast scan mode and facilities to search for words or phrases.

From a new range of software under the "Select-A-Story" comes "TheGreat Explorers Collection". Solaris have decided to offer two of the series as shareware.The shareware version features Christopher Columbus and Marco Polo.Registered users get another six explorers.

The program was designed for children aged 10 to 14 who are learning about history in school.

Exploring Chemistry

Author: David W. Ostler
Registration: $29.95
Performance: 7/10
Ease of Use: 7/10

This disk features two programs designed to aid secondary school chemistry students.

The first is Elements which presents the periodic table on the screen giving information about Atomic Numbers and Atomic Weights along with the standard symbol for each element.

The Periodic Table appears to be fairly up to date and it features elements that have not even been named yet. It can also be printed out.

The information and periodic table can be presented on any type of monitor screen and graphics card but, as with most programs, is clearer and better-presented on EGA or VGA.

The second is Molecule which is an an interesting introduction to molecular structure, illustrating the subject graphically.

Exploring Maths (one disk)

Authors: Various
Registration:Various
Performance: 8/10
Ease of Use: 8/10

This suite of programs, an upgraded version of a popular title, is ideally suited as a tutorial and revision aid for secondary school maths students. By using a PC-presentation they make the subject easier to understand and absorb.

Topics covered are Algebra, Fractions, Areas and Volumes.

Problem solving exercises are presented by the program and these may be amended by the parent or teacher. Answers are checked for accuracy and scored.

SCIENCES

Cell Biology (one disk)

Author: Leonard Ginsberg
Registration: $20
Performance: 8/10
Ease of Use: 8/10
Requires EGA or VGA card and a mouse.

The subject of Cell Biology, particularly DNA synthesis, lends itself well to being taught on a computer as a picture displayed at the right time can explain a point far more readily than dry text.

This program is intended to help students assess their level of knowledge and review the basic concepts in the subject area. It is not intended to replace lectures or the reading of the text.

The program was designed to allow students to move through this difficult material at their own pace.

Cell Biology uses a PC tutorial System called U-Tutor and this has been applied to a number of other tutorials.

The system makes learning more interesting by combining text and graphics plus a series of question and answer routines to get you on to the next topic.

The author is a college lecturer and so is well acquainted with the needs of students. The complete Cell biology Program is available to registered users (four tutorials in all).

MATHS

X-Y See EGA (one disk)
X-Y See VGA (one disk)

Author:Insight Advantage
Registration: $20
Performance: 9/10
Ease of Use: 7/10
Requires EGA, VGA respectively

A picture speaks a thousand words, as they say, and the subject of maths is no exception. Utilising a modern PC's high resolution graphics, the XYSee program supplements secondary school and college level studies in Algebra, Geometry, and Trigonometry.

XYSee is an interactive, computer-aided-instructional program which illustrates and calculates formulae and expressions using high resolution colour graphic displays. XYSee covers points, lines, conic sections, trigonometry, parametrics, composites, and artistic mathematics.

XY See's game module challenges the student to solve puzzles with complexities. The goal is to duplicate the form, position, and orientation of functions by selecting proper variable values

Special help is available for identifying boundaries and zeroing in on solutions. A performance reporting module continuously tracks solution attempts and the difficulty level attained.

FILE AND DISK MANAGEMENT

DOS Toolbox (two disks)

Author: Computer Tyme
Performance: 7/10
Ease of Use: 7/10

The Computer Tyme DOS ToolBox contains powerful and simple to use utilities. Some of the programs are written for beginners, others for intermediate and advanced users. The Computer Tyme DOS ToolBox programs come with help screens and on-line documentation which give quick proficiency with each program. The toolbox was originally written in 1985 to provide the same functions for MS-DOS as a program called Sweep did for CP/M. The main function of this program is to be able to select files from a list of files, then either copy them, move them, or delete them. Thus the design of this program is such to make these functions as easy as possible.

The files are displayed in a vertical list. The up and down arrows, page up, page down, home and end keys move you through the list. The 'G' (GOTO) command is provided to help you get to a desired place in the list quickly. Files are selected (marked)using the right arrow key, and unselected (unmarked) using the left arrow key. All files can be marked using Ctrl-Right Arrow and unmarked using the Ctrl-Left Arrow. A wild card mark is provided to mark all files that match a particular mask. When files are marked they are simultaneously highlighted for action.

For anyone with a lot of 'housekeeping' to do on the mass of anonymous files which have accrued on hard and floppy disks (and who hasn't?) this is a very useful tool which let's you get things sorted out efficiently.

Skull (two disks)

Author: Dr. Steven A. Reid
No registration fee
Performance: 7/10
Ease Of Use: 8/10
Requires EGA

Another novel program which may only have a small commercial potential but at PD prices is well worth having a look at.

Skull basically consists of a series of digitised images of the human skull taken in cross-section. The images are covered with invisible boxes that you can activate to learn more about skull anatomy. Users can select the point they wish to view and the corresponding section is displayed.

Skull is developed on a hypertext system called HyperBase, and it offers an excellent example of a hypertext system in practical use particularly as it cleverly combines graphics and text.

The package supports a mouse, although one is not required. You can scroll through the buttons on an image by pressing the right mouse button or the space bar. You activate a button by pressing the return key. You can see all of the labelled buttons on the image by pressing the F2 key.

The author states that if this package is successful, he will develop simulated patients, with access to x-rays, lab data, physical exam findings, etc. in the future.

Maxiform (one disk)

Author: Herne Data Systems Ltd
Registration: $10
Performance: 9/10
Ease of Use: 9/10

Are you tired of running out of space on your floppy disks? How would you like to fit

420k on a 360k disk, 800k on a 720k disk,1.4 meg on a 1.2 meg disk, or an incredible 1.6 meg on a 1.44 meg disk?

Sound impossible? Well not any more. If you are using DOS version 3.2x or later, then this innovative new shareware program from Herne Data Systems is just the thing for you. Using Maxi Form for all your floppy disk data storage needs is like getting an extra one and a half disks free with every box of floppies that you buy.

In most cases, no special software driver programs are required to access these disks from DOS. However, in cases where reliable standalone operation cannot be achieved (it is a complex function of ROM BIOS details, DOS version and disk controller characteristics), the simple device driver SMAX.COM can be used to patch the BIOS code and provide resident support.

To use Maxi Form you will need a 100% IBM compatible computer (PC, XT, AT, PS/2, Convertible, etc) with at least one 360K 5.25", 1.2 meg 5.25 ", 720K 3.5" or 1.44 meg 3.5 " floppy drive. The 1.44 meg drive can be used to format 800K 3.5" disks; and the 1.2 meg drive can also be used to format 420K disks or 800K 5.25" disks. Note that with many BIOSes, you will need to use the TSR driver program SMAX.COM supplied with Maxi Form to read and write MAXI-style disks (especially 800K, 5.25" disks).

Integrity Master
(two disks)
Author: Wolfgang Stiller
Registration: $35
Performance: 8/10
Ease Of Use: 8/10

Integrity Master combines several useful disk management and file recovery functions with powerful virus detection and elimination. It claims to recognize known viruses by name and will describe their characteristics and then guide you through their removal.

It can detect not only existing viruses, but will detect as yet unknown viruses. This means that, unlike other programs, which you must constantly update to keep ahead of the current crop of viruses,Integrity Master needs no updating.

Integrity Master will detect any form of file or program corruption, not just that caused by viruses. This makes Integrity Master a useful tool to provide PC security, change management and hardware error detection. Why spend your time merely checking for viruses when you give your PC a complete check out with Integrity Master?

Integrity Master can reload system sectors on disks which are so badly damaged that DOS can no longer recognize them. It is useful as an aid to PC security. If someone changes, adds or deletes any of your files you will know. You can run your normal test programs to check if your disk drive is working OK It will even detect if a disk error damaged some data yesterday.

Flexibak Plus
(one disk)
Author: Adrian Mardlin
Registration: £29.95
Performance: 8/10
Ease of Use: 8/10

Flexibak Plus is a flexible, easy to use hard disk back-up system that takes a logical, simple and unique approach to the back-up problem.

With a conventional back-up system, you are required to take a full back-up approximately once a week and do daily incremental back-ups which are placed on separate disks. Should you need to restore from the back-up, you must first restore the full back-up and then each of the incremental back-ups up to the last back-up taken.

With Flexibak Plus Plus, all this is different as the concept of full back-ups and incremental back-ups is removed. Instead, you only need to take a full back-up once and then all subsequent back-ups are placed on the same back-up disks, giving some long term speed increases, simpler file restoration and an improved back-up management capability.

USING THE COMPUTER

Getting Started on Computers
(One disk)
Author: Amir Pirouzan
Registration: $15
Performance: 9/10
Ease of Use: 9/10

There are quite a few programs on the market which are intended to teach the computer. Many of them suffer from over-complication and do not allow sufficient 'space' for the totally new user to get to grips with the subject matter. Often they do not deal with the basic practical necessities of getting started.

Now, the author of Professor 3T has come up with a really practical first-step tutorial for PC users which does not make any presumptions about the user's existing knowledge, nor does it drone on and on about DOS commands.

The Professor 3T First Tutor teaches novices from scratch and covers practical topics starting with How To Switch On The Machine! Subjects covered include Sources of Misunderstanding, Computers Simplified, Hardware, Memory, Software, Human and Computer Languages, Programming Languages, Number Crunching, Program Organisation. It tests and scores and even issues a printed certificate.

If you need it First Tutor offers a wealth of knowledge and a comprehensive computer literacy course. Recommended to anyone who wants to know more about the PC without wanting to be baffled by techo-speak.

PC-Tutor
(one disk)
Author: Computer Knowledge
Registration: $15
Performance: 9/10
Ease of Use: 8/10

The majority of PC users have little or no knowledge of the way in which the computer and user interact, ie, the operating system. It is true to say some knowledge certainly is needed even to undertake a few simple tasks, such as finding out what is on a disk, deleting files, copying files, taking back ups and formatting blank disks.

Most PC manuals are virtually incomprehensible to the newcomer. Reading them can often make matters worse. What better way to learn how to use your computer than on the computer itself?

The author of PC-Tutor has gone to great lengths to ensure that his program helps, not hinders, and he does not assume any previous knowledge. The course is interactive, presenting the user with information, then asking for a response on the keyboard.

The program covers computer history, introduction to DOS,- computer terminology, sub-directories, hardware, batch files, the keyboard and an introduction to programming.

Material is presented in a series of screens and the user has the ability to move forward or backward through the tutorials, or jump to selected locations using a menu. Short quizzes test you on your knowledge but you may bypass these when reviewing

Fasttype
(one disk)
Author: Trentech
Registration: $20
Performance: 8/10
Ease of Use: 8/10

Fastype is a typing instruction program specifically designed for PC styled keyboards. These quick-start instructions will get you going right away. You must have a Colour/Graphics Adapter Card-(CGA) or equivalent (EGA), (NOT Hercules)

For Drills: Place the fingers of each hand on the home keys (ASDF JKL:) and type each letter as you are prompted for it. The selection of letters to type is random: the number of characters you successfully type is displayed before you start. When the drill is finished your WPM and other data will be displayed in the text panel. For Lessons: type each character pointed to by the cursor and when you reach the symbol, press the enter key (Ÿ) (for carriage-return). When you finish the lesson your WPM and other data will be displayed in the text panel.

There are 5 drill, lesson, and feature selection menus and two sub-menus for selecting additional keys to learn. The primary menus can be displayed by pressing function keys F1 to F5 anytime while the screen keyboard is displayed. And, while any selection menu is displayed you can go to another menu either by selecting it from Menu #1 or by first holding down the ALT key and pressing F1, F2, F3, F4, or F5. All menus have the Help Facility available

DOS Summary
(one disk)
Author: Computer Tyme
Registration: Freeware
Performance: 7/10
Ease of Use: 8/10

A good companion to the PC-Tutor and from the same author. There is no registration fee – the program is yours for the price of the shareware copy.

For anyone who is likely to use more than one or two DOS commands this program is invaluable.

When starting DOS Summary you have the option of accessing either an alphabetical menu of DOS commands or a menu where commands are grouped by function.

A second way of accessing a command is by starting the program with a command name as a parameter. DOS Summary will find the closest match to the command you entered - so exact spelling is not necessary. Only DOS commands are in this version; batch commands and CONFIG.SYS commands are not. Support is given up through DOS version 4.01.

LANGUAGES

Animal Farm
(two disks)
Author: Steve Herbert
Registration: $15
Performance: 8/10
Ease of Use: 9/10

Animal Farm is one of George Orwell's most famous books, and possibly the most widely read. Because of the simple style in which it is written, it may be read by children as an entertaining story as well as by adults searching for a deeper meaning.

The program consists of a series of activities to assist high school students learning Orwell's novel 'Animal Farm'. The student can select the activity of his choice from a series of menus.

Activities include several quizzes or games, notes on a wide variety of topics, graphics of the Farm and even a competition with the chance to win worthwhile prizes.

The games are designed to be fun and at the same time to provide a fairly painless way to memorise quotations, learn important passages, and in general, to become familiar with the plot, characters and themes of the novel.

French Tutor and other Languages
(one disk each)
Author: Andrew Bartorillo
Registration: $10
Performance: 6/10
Ease of Use:8/10

The programs on this set of disks comprise a series of Language Tutors for learning French, Spanish, German, Italian and Hebrew.

Each disk is self-contained and offers a complete tutorial on one language. The following text refers to all the tutorials.

Language Teacher is a series of menu-driven language tutorial programs. Each program in the series contains hundreds of word combinations and verb conjugation forms. A printer can be used to take advantage of its versatility.

Also included is the capability to select language-to-English or English-to-language combinations, choose multiple choice answers,be tested again on missed answers, print a multiple choice test, and run a full quiz diagnostic routine with line printer output.

Of particular interest to non-English students is the capability to select the direction of the combinations.

All word, phrase, and verb conjugation selections are done randomly by the program, the user being unable to predict what the next selection will be. The program package is not designed to teach conversational language or pronunciation but, instead, to provide practice drills in order to increase your working vocabulary and to enhance your use of the conjugation forms.

The extent of the vocabulary of each program is around 800 word combinations and about 1800 verb conjugations. More than enough to keep the most ambitious language student occupied!

MENU SYSTEMS

Menu Direct Gold
(two disks)
Author: Applied Micro Systems Technology
Registration: $39.95
Performance: 9/10
Ease Of Use: 8/10

Menu Direct Gold is the new name for the Point & Shoot Hard Disk Manager originally released as a commercial package. It was nominated for one of BYTE's best product awards at Spring COMDEX 1991.

For anyone with a hard disk full of assorted programs and files located in a variety of sub-directories it makes excellent sense.

Menu Direct Gold is essentially a file/directory/program manager but offers a wide range of associated features that make it very powerful.Yet the author has ensured that all functions are easy to use and clearly explained.

The program offers unlimited user menu entries with single keystroke execution of programs. Split screen file list and directory tree.

The normal Copy, delete, edit, find, print, and view single or tagged files, Delete, make, rename, hide, and print directories are offered plus the very useful Undelete files and directories.

Instant DOS access, user-defined program colours, floppy disk formatting, and mouse support are all provided. Menu Direct Gold features Pull-down menus, hypertext help system, password protection, usage logging and a host of other features make this an excellent DOS Shell.

Power Menu
(one disk)
Publisher: Shareware Publishing
Registration: £49.95
Performance: 9/10
Ease of Use: 8/10

One of the biggest frustrations for a new user of a PC is the unfriendly operating system which comes with it (unless of course you are fortunate enough to have a high performance computer and Windows)

A newly unwrapped computer with a hard disk drive will probably just present you with the C> prompt when you switch it on. You then have to know about sub-director tree structures, DOS commands and the appropriate name to type in to get any programs running.

To overcome this problem several authors have written new 'front-ends' to MS-DOS which improve the interface between you and your programs.

These are usually in the form of an on-screen menu system which lists the options and programs available, tells you which keys do what.

Power Menu is one of the best examples of the genre. It is easy to install and menus are completely user-configurable. You just type in the title you require, the name of the program and where it can be located. Plenty of on-screen context sensitive help is provided and there are several useful additional utilities if you want them.

Disktree
(one disk)
Author: Richard Smith
Registration: $20
Performance: 9/10
Ease of Use:8/10

Making order out of the chaos of thousands of files contained on even the smallest of hard-disk drives is both important and incredibly tedious.

Without control and order, files get lost, space gets wasted and productivity drops as users spend more and more time just keeping track of what files are where.

Of course, in a perfect world, users would save their data according to a sensible and logical standard of what files should go where. Unfortunately, no one does this with any real conviction and when things get confused, there is no quick way of sorting the mess out.

DiskTree is an attempt at creating an affordable, powerful and above all, easy-to-use disk management tool. It offers full Microsoft mouse support, extended screen resolutions, i.e. 43 and50 line modes, up to 26 drives in memory at once and between10,000 and 13,000 files and directories held in memory.

Should be quite capable of keeping your files in order!

FIRST STEPS

Sarah and Katie's First Disk

Author: Meg Noah
Registration: $15
Performance: 8/10
Ease of Use: 9/10
Requires a colour monitor (VGA, EGA, or CGA)

There are many software packages for children ages three or four, but SarahWare is specifically aimed at infants and toddlers. It is not intended as educational but more as a stimulation by allowing them to interactively select colours and designs which fill the screen in an animated way.

Infants quickly become fascinated by the quickly changing bright pictures. Those as young as three months old will learn to press the keys to change the design. By five months, two fisted banging begins but can be controlled by parents encouragement. By nine months the baby will have learned that certain function keys play music and have favourite letter keys.

Katie's Clock is designed to help youngsters tell the time. It operates in five time modes: normal, random, sequential, input, and digital. All times are clearly displayed on a colourful, easy to read clock face.

Options are to type in the displayed time or, conversely, set the hands of the clock to match the time stated. Good use is made of the graphics display and colours to stimulate interest.

Animated Alphabet
(four disks)
Author: Tom Guthrey
Registration: $8
Performance: 8/10
Ease of Use: 9/10
Requires EGA/VGA and Hard Disk.

The authors have decided to make full use of graphic animation techniques to teach youngsters their alphabet. The correct answer is rewarded with a variety of clever little animated sequences.

Each letter of the alphabet is displayed on the screen and, when the child presses the corresponding key a picture of an everyday object is displayed whose name begins with the letter selected.

Each picture then undergoes a clever animated sequence lasting for about 15 to 30 seconds eg A for Acorn shows a falling acorn which then grows into an oak tree which then sheds an acorn which falls and grows into a tree and so on ...

The registration copy is personalised with you child's own name which is used during the program's operation. It also includes an extra program called ABC Song.

EARLY LEARNING

Wunderbook
(one disk)
Author: Hung Fam Li
Registration: $10
Performance: 8/10
Ease Of Use: 9/10

There is something for all youngsters in this selection for 3-10 year olds. Each game is fun but contains a strong educational element too.Each of the five topics uses simple symbol-type menus which are selected from the keyboard or using a mouse.

Whilst the disc contains six basic topics, additional ones can be added at a later date as the child progresses.

The topics covered are objects, numbers, alphabets, words, shapes and language of different cultures. the latter may also be of interest to adults.

Each program is designed to stimulate children's memory, perception pattern recognition and language manipulation whilst also encouraging the child to explore and play.

Parents can also track their child's progress using scoring tables built into the program.

Monkey Business
(one disk)
Author: Jenny Oldfield
Registration: £20
Performance: 8/10
Ease Of Use: 8/10
Requires Hercules or EGA and Mouse: CGA version available

This is a story about the escapades of the Terrible Twins written for 7-10 year olds. What makes it different from all the rest is that the storyline can be altered at various points to generate a different outcome. As the story unfolds, several exciting, crazy options take Marvyn and Marlene through an exhausting day at Tigerland Park. The story can be extended, contracted or diverted by simple mouse control, no typing to do!.

The Terrible Twins adventures are based on the sound, modern educational concept of the "real book" reading method with carefully researched vocabulary and interest levels. Their humour and lively illustrations and fast action will make them a firm favourite.

Monkey Business is illustrated with attractive line drawings designed to hold the child's interest. Whilst having a strong educational value the program forces down the barrier between Computer Studies and reading skills.

Jenny Oldfield is a successful writer of children's stories in both the educational and commercial fields, with more than a dozen books to her credit. This is her first successful venture into computer learning programs.

CHILDREN'S GAMES

Pallanda
(one disk)
Author: ShareGames
Registration: $15
Performance: 7/10
Ease of Use:8/10
Requires EGA or VGA. Mouse recommended.

This is a fun game for youngsters age between five and 10 but it offers enough strategy and luck to make it challenging for Mum and Dad too.

Prince Pallanda can be included as one of the four players. The name, Pallanda, comes

Hoorah For Henrietta

Author: Scetlander
Registration: £24.95
Performance: 9/10
Ease of Use: 9/10

Henrietta and Hopeless Henry are getting married in the morning.But all is not well. That mischievous bird, John the Parrot, appears at the last moment and is determined to create havoc. He steals the groom's wedding clothes and kidnaps the groom himself.If Henry isn't rescued in time, John will cover him in cold custard! You must help Henrietta collect Henry's coat, hat, boots and trousers, otherwise the wedding will be cancelled! Can you get Henry to the church on time?

Hoorah For Henrietta links mathematical exercises to an absorbing storyline featuring Henrietta, Hopeless Henry and John the Parrot. An endless supply of randomly generated problems at all levels guarantees boredom-free practice. It improves everyone's mathematical ability and makes the process stimulating and entertaining. It also provides practice in addition, subtraction, multiplication and division over a wide range of ability levels.

A major feature of the program is the extensive Parent/Teacher's Control Section which enables easy adjustment to suit every user.We strongly advise careful study of this section to ensure a comfortable starting point for each student.

The registered version incorporates eight levels of difficulty -only one is available on the shareware version

from 'Pal Land' where everyone plays happily together and King Pallanda makes sure everyone plays fair.

The object of the game is to land on the gold circle in the centre by moving to the closest colour shown on the spinner. There are hidden surprises everywhere along the way with pictures you can watch being drawn. It sounds simple. However, the nearest matching colour is often in the wrong direction!

Pallanda is designed so even youngsters that aren't reading yet can learn to play well. Finding the closest colour enhances counting skills. Learning the easy way.

TUTORIALS

C and Turbo C Tutor
(two disks)
Author: Coronado Enterprises
Registration: $39.95
Performance:7/10
Ease of Use: 8/10

Many owners of the PC like to try their hand at programming at some stage but are often put off by the price of commercial programs. Of course it's always the case that you don't know whether you're going to like it until you try it.

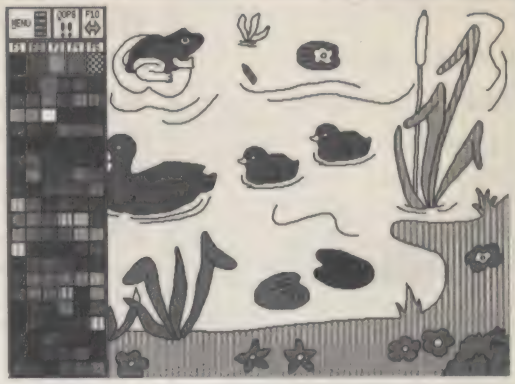
Fortunately there are plenty of compilers and tutorials in the shareware marketplace so for a few pounds you can try your hand at programming or just find out more with one of the many tutorials available.

One of the most popular high level languages is C. Whilst not the easiest to understand initially due to its fairly brief syntax, it produces fast, executable programs and is very versatile.

A good introduction to C and the more powerful C++ can be found in this tutorial package. It comprises two disks, the first is full of text files containing the tutorial which takes you from beginner through to intermediate level. The second disk contains a collection of source code examples to study and compile.

The author recommends the use of Turbo C, Power C or Microsoft C, if you want to try the examples out.

EGA Colouring Book
(two disks)
Author Kinderware
Registration: $20.00
Performance: 8/10
Ease of Use: 9/10
Requires EGA or VGA



Most children enjoy colouring in pictures and here is the clean, modern way for them to do it – on the computer.

EGA Colouring Book lets them use more than 500 colours and patterns to colour full screen pictures. Children, age three and up, will enjoy bringing the pictures to life with colour.

ECB teaches eye-hand co-ordination and encourages artistic expression. It is very easy to use and does not require the child to be able to read – most of the common commands have picture icons which can be easily identified. So, it is one of the few programs that three-year-old children can actually use alone.

It is a great program to use to introduce the computer to children. They will have so much fun, they won't even realise that they are learning basic computer skills.

ECB can be controlled by either a MicroSoft compatible Mouse or the keyboard and offers disk save and load functions and the ability to print out the drawings on a suitable printer.

DRAWING AND PAINTING

Graphics Workshop
(two disks)
Author Alchemy Mindworks
Registration: $40.00
Performance: 9/10
Ease of Use: 8/10

Graphic Workshop is a program for working with computer bitmapped graphic files. It will handle most of the popular formats. It offers a simple, menu driven environment which will let you perform the following operations on your graphics files:

View them.

Convert between any two formats (with a few restrictions).

Print them to any LaserJet Plus compatible or PostScript laser and many dot matrix printers. Graphic Workshop can print colour pictures to colour PostScript and inkjet printers.

Dither the colour ones to black and white.

Reverse them.

Rotate and flip them.

Scale them.

Reduce the number of colours in them and do colour dithering.

Sharpen, soften and otherwise wreak special effects on them.

Graphics Workshop operates on any of the following formats:- Macpaint, GEM/IMG, PC Paintbrush PCX, CompuServe GIF, TIFF, WordPerfect Graphics WPG, Deluxe Paint/Amiga IFF/LBM, PC Paint Pictor PIC, Truevision Targa, Windows 3 BMP, Microsoft Paint MSP, Encapsulated PostScript EPS, Self-displaying EXE pictures, Text files Using Graphic Workshop, you can have your image files in the formats that your software recognises, all without keeping track of numerous utilities.

In addition, using the half-toning and dithering facilities of Graphic Workshop, you can convert full colour digitised photographs for use as superb black and white clip art, suitable for inclusion in your documents.

Graphic Workshop will handle image files of any size. It will use extended or expanded memory if you have some, and disk space if you don't. It has a fast and easily understood user interface.

Once installed, you'll wonder how you ever managed without it.

PC Draft II
(two disks)
Author: Natural Software
Registration: $50
Performance: 9/10
Ease of Use 7/10

PC-Draft II is a high resolution pixel oriented drawing and graphing utility, which is designed to facilitate a variety of drawing and drafting requirements. You can produce drawings up to 1280 by 700 dots using the colourgraphic adaptor high resolution graphics mode (640 x 200 dots per screen). Such a drawing will more than fill an 8-1/2 x 11 inch printed output (at 150 dots per inch resolution).

Built-in functions allow you to draw circles, lines, boxes, arcs and curves; draw bar, line and pie graphs; create patterns with which to fill areas; cut and paste objects and save objects to files for later use.

PC-Draft is both menu driven and command driven – all drawing commands may be selected from the menus or may be entered by a single keystroke command such as [C] to draw a circle or [L] for line.

You can zoom in to precisely edit one pixel at a time, record graphic keyboard macros saved in files for later playback and for animation effects and load and edit fonts.

Drawings may be printed on a wide range of printers including those compatible with IBM and Epson Dot matrix, HP Laserjet+, and HP DeskJet printers. PC Draft II offers many more exciting features such as screen capture in all graphics modes, its own programming language called PIX.

Highly recommended, professional standard throughout – great value.

Desktop Paint II
(two disks)
Author:
Compass Systems
Registration: £20
Performance: 9/10
Ease of Use: 9/10
Requires: Hercules or EGA/VGA graphics

The use of pictures can make a big difference to the appearance and readability of a publication. Most Desk Top Publishing programs have the feature for importing pictures but not for actually creating and editing them in the first place.

There is a wealth of what are known as 'Clip-Art' images available in the public domain but many of these need to be altered or enhanced to suit individual requirements. This is where Desktop Paint steps in. You can use it to create a drawing from scratch or load in a suitable clip-art picture and edit it.

It offers all the standard drawing features plus a selection of graphics tools. Formats supported include IMG, TIF, PCX, MAC and WPG. A mouse is required.

Desktop Paint is an excellent drawing program. It is designed more for professional quality Desk Top Publishing applications rather than just as a children's doodler, hence it is not in colour.

SPORTS SIMULATIONS

Cunning Football
(one disk)
Author: Cass Cunningham
Registration: $18
Performance: 8/10
Ease Of Use: 8/10
Requires EGA/VGA

Cunning Football is probably the best interactive football game available, including any commercial games. It is a fun and exciting game oriented toward those of us football fans who have a relatively good understanding of the game of football, and enjoy it.

It tests both skill and strategy, requiring a user to guide players as well as call plays. The program requires an IBM compatible computer with an EGA or VGA adapter. Cunning Football allows the user to select either the keypad, a mouse, or a joystick as the controlling input device.

Cunning Football simulates a real football game as closely as possible. It includes interceptions, penalties, and other subtleties found in football. However, it was also designed to be easy to use, so some realism was sacrificed for the sake of user friendliness.

After registering your copy of Cunning Football, you will receive an extended user's manual along with an expanded playbook. The manual has detailed explanations of all of the plays.

Sticky Wicket
(one disk)
Author: Mark Carter
Registration: £10
Performance: 8/10
Ease of Use: 8/10
Requires EGA or VGA

Sticky Wicket claims to be the ultimate cricket game for the PC. It combines the art of captaincy with week to week action of playing.

Your objective is to win the league and 'Sticky' cup. Your predecessor has left, despondent with the teams poor run of recent results. By selecting the team, choosing field placings, who bowls the crucial overs, where everyone bats and even when a player must run you aim to return the team to its former glory. Your success at doing so will be compared to the greats e.g W.G Grace , M.Brearly in the hall of fame. Hence the term 'Sticky Wicket' hence the situation you face where winning is the difference between glory and failure! The shareware version is limited to 1 LEAGUE season only.

Features include: database of 128 players, 8 teams each with career figures (updated seasonally) / Ability / Form / Fitness ratings; seasonal and career averages; a season of 40-over Sunday League matches including league table, fixture list and full results service every week; edited highlights of the game including all the action shots, L.B.W and other dismissals; umpire decisions in response to appeals; team selection; five different field settings and your personal career page.

Seabattle UK
(one disk)
Author: S. Rooney
Registration: N/A
Performance: 8/10
Ease of Use: 8/10

In the period between the early 1900s and just after the Second World War, the battleship was considered to be the capital ship of the world's navies. Starting with the British Dreadnought and culminating in the United States Iowa class of battleships, which were in action in the Gulf albeit using weapons not heard or dreamed of initially.

Seabattle is an historically accurate simulation based on these famous warships. The objective is for the player of either side to achieve the minimum conditions for victory. Victory is not simply determined by the number and type of ships sunk on both sides. There are four different types of objective a player may be set: 1) Destroy Enemy Naval Forces 2) Move Ships To Objective 3) Deny Enemy Its Objectives 4) Perform Raiding.

Seabattle requires either CGA or EGA/VGA. In its registered form it enables a player to take on the computer or another player whilst in command of up to 20 ships and more than 50 squadrons of aircraft (both carrier and land based)

SKILL AND STRATEGY

Space Shades
(one disk)
Author: Rich Frank
Registration: $15
Performance: 8/10
Ease of use: 7/10

Space Shades places you in the cockpit of a space cruiser. You control your ship, a space station, and a spy remote while exploring planets in preparation for your encounter with a hostile enemy. Space

Shades is designed to provide the feel of a flight simulator, while presenting bit-mapped images of the objects you see when operated in graphics mode. During play, you look directly out a window into 3D Space. Provided with a navigation computer, you have complete freedom to fly wherever you want. You can loop around your station, fly into the Sun, or crank up your ships speed to .9 SOL. Your mission will be to seek out your enemy and destroy him before he takes over the galaxy. That is his mission also.

Start with one allied planet and a space station before guiding your ship off into uncharted territory. You can expand the number of your planets by fighting for their alliance. Go ahead and enjoy yourself: Collect the spoils of easily earned victory over defending planetary Hornets. It won't be so easy to destroy your main opponent, Tin Head.

Once you locate your enemy, Space Shades practically becomes a different game. Your ship and the enemy ship have nearly the same capability so it should be an even match. He's fast, but probably a Tin Headed robot. With a little style, a lot of nerve, and a some items picked up at a few of your planets, you can send him home.

ARCADE GAMES

Pharaoh's Tomb
(one disk)
Author: Apogee
Registration: £29.95
Performance: 8/10
Ease of Use: 9/10

Pharaoh's Tomb is an arcade game set in a huge Egyptian pyramid. You will need to explore and survive 20 uniquely dangerous levels (screens) riddled with ingenious puzzles and traps.

This game uses a special animation system called FAST (Fluid Animation Software Technology) which allows for flicker free movement even on the older IBM PCs. You start with five lives and a few spears, which can be thrown at offending denizens that guard the pyramid. Moving walls, falling spikes, bats, mummys, and magic winds are just some of the hazards to overcome.

On each level you will need to collect one or more keys to advance to the next level. And hidden on the final level will be the prize of your journey. Notable features: No two levels will have the same animated creature patrolling it, which adds greatly to the variety of the game. Sound effects are also used, but can be toggled off. The keyboard control can be

configured to two alternate sets of keys. A five player permanent high core table keeps tracks of the all-time best explorers. Plus, you can save the game on any level and restore at any time.

This is the first of four volumes of Pharaoh's Tomb, subtitled Raiders of the Lost Tomb. The other three volumes are: Pharaoh's Curse, Temple of Terror, and Nevada's Revenge!. The volumes should be played in sequence, since they continue the story to the final encounter. Volumes II to IV are available to registered users.

Monuments of Mars
(one disk)
Author: Apogee
Registration: £29.95
Performance 8/10
Ease Of Use 8/10
Requires CGA, EGA or VGA

In the game, NASA has sent several manned missions to explore the mysterious monuments but every one has ended in disaster. Soon after the astronauts landed on Mars NASA lost contact with them and no one knows why.

You're the last hope. You have been chosen for a special mission to rescue the missing astronauts and to discover the secrets of the Martian monuments. The game begins just after your ship lands on Mars near the site of one of the many monuments.

This is an arcade/adventure game set in the near future in which you explore a secret underground city on Mars. In the first volume (First Contact) you need to survive 20 unique and challenging levels/screens filled with puzzles, traps, creatures and useful artefacts.

This game features great graphics and sound effects, plus a compelling and fascinating story. Features include save/restore, high score chart, sound on/off and keyboard configuration. This is the first game to give you unlimited lives! You never see a "Game Over" message in The Monuments of Mars!: you just restart the level whenever you die so you can focus on solving each level without the hassles of constantly saving and restoring your game.

Jumpjet
(one disk)
Author: Montsoft
Registration: $15
Performance: 7/10
Ease Of Use: 9/10
Runs on all screens

A popular mid-80s program called 'Striker' has been a part of many shareware libraries – it's main drawback being the use of the old-fashioned – 'IBM' CGA colours (blue, purple and white) and rather crude animation.

Jumpjet is a welcome improvement which retains the original compulsive gameplay but introduces modern smooth and colourful graphics.

To achieve authentic arcade speeds, the author has used a combination of Assembly Language and C in his programming. Even though there maybe 50 to 100 objects animating on the screen at one time, the game will have no problem processing the information quickly.

Running Jumpjet on a 386 33MHz machine will appear to run at the same speed as a 6MHz 286 machine. There are approximately 18 frames per second. You will notice, however, a reduction in speed on slower machines.

The first screen you will see is the main menu. This is where you can select from playing the game, introduction, saving the score, reviewing the score, registration and exiting the game. To select an item, use the up and down ARROW keys and press ENTER or press the capitalized letter of the desired item.

You can control your jet by pressing the ARROW keys in the cor-responding direction you want the jet to go. By pressing the same direction again, the jet will accelerate in that direction.

Moraff's Superblast
(one disk)
Author: Moraffware
Registration: £35 for complete set of games
Performance: 8/10
Ease of Use:9/10

There have been many games based on the original Breakout theme where your task is to bounce a ball at a wall using a simple paddle, chipping away at the bricks until you get to the other side – but none of them is in the same class as Moraff's Superblast.

This one has so many new features that it brings a whole new life to the theme. The action is fast but not so fast that the game is unplayable (and it can be adjusted) but interest is sustained by the fact that each time a screen is completed a totally new and very different one comes up.

The variety of objects is also quite wide, some break up, some explode into a myriad of more balls, some bounce off, some make your paddle bigger, others make it smaller, others are one-way only.

The program has been cleverly designed to work on all types of monitors and adjusts the resolution and graphics accordingly. This is the sort of game you shouldn't start late at night or you'll be going to bed in the small hours!

HI RESOLUTION GAMES

Commander Keen II
(Two disks)
Author: Apogee
Registration: £29.95
Performance: 10/10
Ease of Use: 9/10

This is the second Commander Keen trilogy and is sub-titled "Goodbye Galaxy" and it compares very favourably with most commercial games.
Although Commander Keen I was fun to play, this follow-up is a major improvement in terms of stretching the graphics to the peak of performance, offering slick, smooth scrolling and featuring excellent, compulsive game play.
In this all new adventure starring kid genius Billy Blaze, a new alien invasion threatens to wipe out our very galaxy, the Milky Way!
Amazing new features include: 3-D perspective, Star Wars-style text scrolling, sloped surfaces, multiple sound card support with brilliant music and digitised sound effects, and out-of-this-world graphics.
Three versions are available: 256-colour VGA, 16-colour EGA, and 4-colour CGA. and have to be specified when ordering

TEXT ADVENTURE GAMES

Aliens Laughed At My Cardigan
Author: A M Boyle
Registration: £30 for an adventure tailor-made with you in the leading role.
Performance: 7/10
Ease of Use: 9/10

With a title like that, you've got to try the program! And, if you enjoy a challenge along with a laugh you won't be disappointed either.

Aliens Laughed At My Cardigan is produced by a young UK author who clearly has a rather off-beat sense of humour. His style is of the Hitchhikers Guide to the Galaxy and Infocom type.

The scenario opens with you relaxing on a garden swing after celebrating your birthday. As you while away the hours an alien spaceship descends on to your lawn and two weird beings walk out of the lower bay door.

They stare and point at you then, when you ask them what they want, one says to the other, 'Is that a totally bogus cardigan or what?' Within seconds it pulls out a ray-gun, points it at your cardigan and shoots. Your cardigan fades away to nothing. Your mother bought it for you last Christmas so you know you're now in deep trouble. So what do you do next? Combines a sense of absolute nonsense with classic adventure gameplay.

CARD GAMES

Global Battle
(one disk)
Author: Phil Munnelly
Registration:£6
Performance: 8/10
Ease of Use: 8/10

Global Warfare Simulator is, as its name suggests, about a world at war. The game is played by up to ten players, any number of which can be a human players. All others are controlled by the computer. If no human players are set up then the game will play as a simulation.

Each world is divided up into a number of continents which are themselves divided up into

regions. Each region is occupied by one or more armies of a single player. The ultimate object of all players is to take over the number of regions required to win the game.

After the initial option setup, the game begins by allocating the initial armies to each player. Each game turn involves each player being allocated additional armies depending on the number of regions held, with bonus amounts being given for controlling complete continents.

The player can opt to attack a region of another player during their turn, but in doing so loses the armies generated by the regions (but not the continents).

GRAPHICS ADVENTURES

Kingdom of Kroz II
(one disk)
Author: Apogee Software Productions
Registration: £9.95
Performance: 8/10
Ease of Use: 9/10

Kingdom of Kroz II uses high-speed 16-colour text-based graphics and therefore works on all machines. It features a tremendous sound effects library. This shareware game is the first in a series totalling seven different games. The author has adopted an unusual and effective method of registration. instead of asking for payment for this, the first game in the series, he asks satisfied users to pay for the subsequent games in the series.

You must navigate through dangerous chambers, solving puzzles and avoiding pitfalls. Collect gems, whips, chests, nuggets, tablets,keys and scrolls to aid your progress. This game is as much strategic as it is pure arcade fun.

Hugo II WhoDunnit?
(one disk)
Author: David P. Gray
Registration: $20.00
Performance: 9/10
Ease Of Use: 9/10
Requires EGA and Hard Disk

It's adventure time again as Hugo and Penelope get swept up in another superbly animated 3D EGA extravaganza! This time a murder mystery is afoot with a couple of fiendish twists and a large helping of humour along the way.

Just look what's in store; a revolving bookcase, a saucy French maid, and a murderer!! Hugo II, Whodunnit? follows the same look and feel of Hugo's House Of Horrors but with many more screens and characters.

If you enjoyed the original Hugo adventure, Hugo II is a real treat in store for you!

Use simple English to instruct Hugo to perform an action. For example "look around" or "look at door" to look at things. To pick something up try "pick up the gun" or "get gun" or "take gun" etc. Many synonyms are allowed but if Hugo doesn't seem to understand, try re-phrasing your command.

CLASSIC ADVENTURES

Cliff Diver
(one disk)
Author: Patrick Farley
Registration: $10
Performance: 8/10
Ease of Use: 8/10

This is the author's first attempt at computerised interactive fiction; an adventure novel entitled, Crime to the Ninth Power. In this game, you'll be introduced to a character named Cliff Diver; a private investigator living and working in San Francisco.

Knowing your way around would certainly be an advantage in playing the game. Cliff may talk about something down by the waterfront, and you may remember driving along the waterfront. But as to going there and trying to find the building Cliff mentioned, I don't think you'll have a lot of luck.

The game is quite challenging but is interspersed with Infocom-style humour which makes it entertaining too.

For those of you who get stuck easily and hate wasting hours poring over a problem, the author has very sensibly produced a companion "Hints" disk which is also available as shareware.

Go
(two disks)
Author: S B Peirson
Registration: £14.95
Performance: 8/10
Ease of Use:9/10

Go is believed to have originated in central Asia whence it spread eastwards. There are ancient records of Go in both Nepal and Tibet and from there the game reached China. Now it's available for your PC!

Go is a game of strategy for two players. It is played on a roughly square board marked out with a 19x19 grid of lines. One player has a supply of black 'stones' (like counters) and the other has a supply of white stones. The players take it in turns to place their stones, one at a time, on a point of the grid (i.e. on an intersection of two lines).

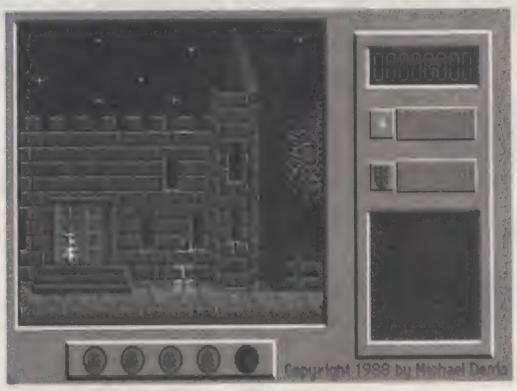
Once placed on the board the stones are not moved. The basic idea of the game is to use your stones to surround areas of the board which then become your territory. Another aim is to surround your opponent's stones which are then removed from the board and become your prisoners.

The end of the game is reached, by mutual agreement between the two players, when the board is covered by safe territories.

The winner is the player with the highest score, i.e. enclosed territory plus captured stones.

Don't worry if you are still not too clear what it's all about, there is a tutorial included with the program together with a number of example games.

Captain Comic
(one disk)
Author: Michael A. Denio
Performance: 9/10
Ease Of Use: 8/10
Requires EGA



You are Captain Comic, galactic hero. Your mission is to recover three treasures from the planet Omsoc, which have been stolen away and hidden somewhere on the remote planet of Tambi.

Your task will not be easy, you will need to gather tools to increase your fighting and defensive capability, navigate dangerous terrain,and avoid or destroy a hoard of deadly creatures. It will take all of the Captain's skill and wit to see the treasures returned to Omsoc.

The Captain Comic character displayed on the screen is controlled from the keyboard using the cursor control keys. The Space Bar makes him jump and, once he has collected his first can of BLASTOLA COLA the Insert key makes him fire.

When COMIC has possession of the DOOR KEY, this key is used to open doors. To open a door and pass through, position COMIC in front of the door and press Alt. The door will slide open and COMIC will disappear, finding himself elsewhere.

When COMIC has possession of the WAND, this key is used to teleport to another place on the screen. Press Caps Lock and COMIC disappears in a cloud of smoke, and re-appears in a new place on the screen. The teleportation is not random, and when used properly, can allow COMIC to reach places on the screen that are normally inaccessible.

COMIC starts the game with 5 lives, and no objects in his inventory.The game will end after COMIC retrieves all three treasures or when all spare lives are exhausted. The treasures include rare gems, a sack of rare coins and a jewelled crown.

THE ADVANTAGE TOP 50

1 (1). Classic Games
2 (2). Tutor Com
3 (19). Duke Nukem
4 (3). Print Partner
5 (6). Henrietta's Book Of Spells
6 (4). World Atlas
7 (15). Arcadia
8 (NE). Ford Simulator II
9 (11). Hoorah For Henrietta
10 (5). PC Key Draw
11 (NE). Commander Keen II
12 (8). French Tutor
13 (NE). Hugo's House Of Horrors
14 (38). Exploring Maths
15 (9). Galaxy Lite
16 (7). Amy's First Primer
17 (10). Printer Toolbox
18 (12). Exploring Words
19 (16). Educating Junior
20 (32). Mummy's Busy
21 (NE). Monuments Of Mars
22 (NE). Page Financial Controller
23 (27). Zephyr Database
24 (14). Andy's Word Games
25 (18). Fun With Maths
26 (21). Dark Ages
27 (22). PC File V
28 (NE). Signsmith
29 (NE). Brother's Keeper
30 (NE). The World About Us
31 (NE) Commander Keen I
32 (24). Essential Utilities
33 (13). Print Shop
34 (20). Dungeons And Dragons
35 (26). Crossword Solver
36 (17). Maths Tutor
37 (23). As-Easy-As
38 (39). PC Draft II
39 (44). Wacky Words
40 (31). Gene Genie
41 (33). Grand Prix
42 (45). Power Chess
43 (43). Desk Commando
44 (NE). Crossword Creator
45 (30). Fun And Games
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48 (37). Keep Them Amused
49 (41). Soccer Star
50 (49). Power Menu

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Dear PC review

Some suggestions for getting Wing Commander 2 up and running, criticisms of PC programming capabilities, and disappointment with Monkey Island 2.

Thinking small

I am writing to you because PC games take up so much space on my hard disk that I keep running out of room. I have about 40Mb free for games, but that is soon eaten up by the graphics and sampled sound effects in Sierra's adventure games and the Wing Commander series. There is no point in installing only part of the game, as Sierra suggests, because that means playing the game from floppy disk, making the gameplay too slow.

I have one suggestion on how games manufacturers could make their games smaller. People only want to see the introduction to a game once and yet some of these commands take up an enormous amount of space, eg, Wing Commander 2, and have to stay on the hard disk until you complete and subsequently delete the game. Surely software houses could give the option to delete the introduction once you have seen it. This would at least give me a little more room on my hard disk to play around with.

Finally, I was wondering whether it was possible to purchase MicroProse's Formula One Grand Prix, written by Geoff Crammond. I have seen it advertised for the Amiga and ST, but not for the PC.

James Westcott
Woking
Surrey

PC review REPLIES

Formula One Grand Prix is due for release on the PC in August.

Seconds of bliss

You lot almost made me happy for a total of five seconds! The reason for this was that I saw the entry in the Buyers' Guide for Secret of Monkey Island 2 and then saw the hardware requirements. I completed Monkey Island using an 8MHz 8086-based PC, and the only time I found it diabolically slow was when the scenes had animated backdrops — otherwise it ran beautifully. I don't know about you lot, but I was rather disappointed when the second release was produced needing a faster processor speed and a VGA card (you all probably think I'm daft owning an 8086, 8MHz, 30Mb, EGA Skoda, anyway).

David Seal
Mitcheldean
Gloucs

PC review REPLIES

That's the way it goes, David. Increasingly games require faster and faster machines. But we are sure you will get lots of pleasure from your Skoda.

More monkey business

I fully realise that to make games increasingly enjoyable, software houses must utilise the technological advancements of PCs, but after recently purchasing and falling in love with The Secret of Monkey Island, I was severely disappointed to find that the sequel would only run on 286s and above. I was wondering if there was any way at all that you or your readers could suggest of getting this game to run on my Amstrad 2086 running at 8MHz, or failing that, is it feasible to upgrade the motherboard and how much would this cost?

On a similar note, I have noticed that many games, for example, Leisure Suit Larry V and Willy Beamish, say "286 or above recommended" on the box. By "recommended", do they mean 'essential' or 'helpful'?

Finally, what will the hardware requirements be for Indy 4? When will you be reviewing it? When is the release date?

Paul Bhalla
Carshalton Beeches
Surrey

Flash, bang, wallop

The emphasis on speed and slickness seems to have reached its apotheosis in your recently reviewed Thunderhawk helicopter flight sim, recommended in your March issue.

On my modest 16MHz 386SX MCA machine the intro sequence lasted 15 seconds. The text screens flashed by so quickly that only half of each caption could be taken in. In the 'game' the war room and briefing room scenes clocked a similar fast pace — no time to read the captions, let alone look at the pictures. The only way to reprise a briefing is to fluff the mission as the program goes straight from briefing room to arming screen. There is no way to pause or slow down these sequences.

PC review LETTER STAR

Exit straight into the action — one second after the program gave me 'control' to AWACS detection and a further second before AH-73 destruction, no time to check armaments, height, speed, jammers or switch on the the night sight. So much for the 'easy' South American scenario.

Try an 'easy' daylight mission in Latin America. This time I am allowed to take off by myself but it's a bit thick to find target and take-off/landing sites close enough to be visible from the air in the same screen. This explains why there are no maps to be accessed in flight. Less than 15 seconds, 50ft and 30mph; I am past target and under attack by two helicopters circling at impossible speed. (Dear Mr President: one man on foot with a mortar would stand a better chance and be cheaper.) There is nowhere and no time to fly.

The game refuses my analogue joystick, placing the pointer immovably in the top left corner of the screen. Mouse control, if you can call anything so far "control", is possible. Core Design admitted to me over the phone that there were "some problems with analogue joysticks" and offered to exchange disks for me two weeks ago. I reckon there are problems with the manual as well, because the security entry system fails on one occasion out of three: the page/line/word from the manual being unacceptable to the program.

As a final insult the program auto-installed in such a way that DOS was unable to delete the empty directory after I deleted the files from my hard disk in disgust.

Does anyone have a flight sim that runs too slowly for them going spare?

Christopher Bridgman
Windsor
Berks

PC review REPLIES

Our reviewer played Thunderhawk at both 8MHz and 20MHz and claims to have found it playable in both. However, we're donating couple of 'slow' simulations to you as a Star Letter prize.

Monkey Island 2: Le Chuck's Revenge is 286 and higher only and that's that, I'm afraid. As for upgrading your Amstrad, see the reply to the letter above for an idea of the possibilities and pitfalls.

"Recommended" usually means that the game will run on lower-specified machines, but probably infernally slowly and jerkily. As for Indy 4, currently, the only exact specifications availabe are for the action game, which is being programmed in this country by Attention to Detail (and I suspect you meant the Lucasfilm adventure game). Anyway, for the action game, you'll need only 512K RAM, EGA/VGA, a mouse or joystick and both Roland and Sound Blaster will be supported. Your 8086 will be fine. The Lucasfilm adventure will almost certainly be more highly specified. Both versions are due out next month, and we hope to review it next issue.

Disk quiz

I have written in the hope that you will be able to shed some light on a subject I have been baffled by. My family shares an Amstrad 2086/30 computer which has a low density disk drive. I therefore buy low density disks. My friend has an Olivetti computer and uses a high density disk drive. He also buys low density disks but is able to format them to high density.

What I do not understand is why there is such a disk as a high density floppy, if there is no need for one.

I have also seen in various computer magazines an advert for a floppy disk converter which punches high density disks' holes in low density disks. Again, why have high density floppies when you can just make the hole in the bottom left corner?

The difference between the price of the disks is quite amazing. From one company I have seen a pack of ten high density floppies for £49.95 when the same number of low density disks can be bought for around £13.99 from very reputable manufacturers. I just cannot see any reason except that the high density disks are of higher quality and better at holding the data. Is this true?

T P Matthews
Dartford
Kent

The difference between low (or double) density disks and high density disks isn't so much physical as a question of quality control: the manufacturer has 'guaranteed' the high density disks to hold 1.2Mb (5.25") or 1.44Mb (3.5").

Your friend is lucky to be able to format low density disks as high density disks: whenever I've tried this (usually unintentionally), on a number of machines, I just get an 'Invalid Media' message.

Therefore, buying a special hole punch for 3.5" disks seems a viable option, but that is not to say that PC Review is prepared to take any responsibility for any defects or faults that arise from this. You can adulterate your disks at your own risk only. It is quite possible that by making a high density disk out of one guaranteed only to hold 720K of data puts a burden on the quality of the media.

By the way, you seem to be paying rather a lot for your blank disks, whatever capacity they are. We find that by shopping around you should be able to find packs of 10 720K disks for under £10 – computer exhibitions are a good place for stocking up as well.

Wing Commander ...

Thank you for publishing my letter regarding Wing Commander 2 in Q&A, Issue 5, PC Review. Unfortunately you have made a mistake: the Amstrad PC2386 is actually a 386DX machine running at 20MHz. It has 4MB RAM and a 65Mb hard disk as standard.

To bring you right up to date with my efforts to get WC2 to run I have even tried to back up a working version of the game from a friend's machine and restore it on to mine but I still get the same problem. I have also tried using Qemm386 as an alternative memory manager but again with no luck. Your readers are my only hope!

I am also a little concerned about Mindscape's response to your inquiry. If the sound/expanded memory is a problem on 286 machines it would surely be much cheaper to install WC2 without the sound option. No doubt WC2 is very good but no game can be worth £300.

Having said that, my efforts have cost me dearly — here is the bill so far:

Wing Commander 2	£30
DOS 5 upgrade	£60
Qemm386	£75
Phone calls and postage	£5

No doubt I will get some benefit from these but it doesn't make up for a game I can't use.

Robert Foulger
Epsom
Surrey

... and a prayer ...

In Issue 5, I noticed that somebody else had trouble running Wing Commander 2.

We own a Compaq 386/20, have 5Mb RAM and DOS 5. When I installed WC2, I had exactly the same problem as Mr Foulger. I have also tried every single combination of Config.sys and Autoexec.bat files as well as several memory managers but nothing worked. I even tried running it without expanded memory — with enough base memory — but it still didn't work.

I then tried installing it on my friend's computer and it worked, so there has to be something wrong with my set-up. Mindscape wasn't too helpful either, so I would be grateful for some suggestions as to what to do.

Robin Massort
York

Sorry about the foul-up over machine specs, Robert. However, Graham Keen, below, thinks he may have a solution to both yours and Robin's problem.

... is answered?

Re Q&A Issue 5: Wing Commander trouble. The Amstrad PC2386 is in actual fact a true 386DX-based machine. I also own an Amstrad and have succeeded in loading Wing Commander 2.

The key to success is to make yourself a bootable disk containing the following files:

Command.com
Config.sys
Mouse.com
Autoexec.bat

Run your machine's set-up and configure some or all of your extended memory as expanded.

Then copy the above files from your DOS directory to a formatted disk in the A: drive.

Edit (using RPED on the Amstrad) the files Config.sys and Autoexec.bat as follows:

Config.sys

```
FILES=30
BUFFERS=6
DEVICE=C:\DOS\SETVER.EXE
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE  32768
FRAME=D000
DOS=HIGH
```

Autoexec.bat

```
ECHO OFF
PATH A:\;C:\DOS
MOUSE
C:
CD\ [Wing Commander directory]
WC2
```

By placing this disk in drive A: and turning on the power it will load the necessary memory drivers, your mouse and even start the game.

Graham Keen
Bury St Edmunds
Suffolk

Sad sounds

I would like to follow on from a point raised in Issue 5 in the letter entitled The Silent Sound Blaster. I too recently experienced this sound card and was also quite disappointed with what I heard. OK, the machine I heard it on was below the recommended speed, running at a puny (by today's standards, at least) 8MHz, although I later had the opportunity to hear it on a 486 PC, compliments of Westpoint

Creative. It was definitely better, but I was still jealous of those sample-wielding Amiga owners and I couldn't help but feel slightly, well, sad. Here we are, in a time when 386 PCs are commonly used for games, and incredible software like Ultima VII is available (well, "real soon now", anyway. Ed), yet a much cheaper computer is producing better sounds. I don't think such a statement is harsh, as in previous issues it has often been stated that the Amiga's sound supersedes that of the Sound Blaster. Please don't get the impression that I favour the Amiga over the PC. I would simply like to hear its sound being produced by PCs.

I wrote to Westpoint Creative about this, though they were polite enough not to reply. In this letter I suggested a sound card with eight channels of sampling at a rate of 6-56KHz (Amiga standard), with a digitising channel. Apparently the sound system in the Amiga cost a reasonable amount less than £100, so I see no reason why such a sound card should cost more than £150. If such a card was produced it would be capable of producing great sound for all games, both music a sound effects. Recent sound cards are emerging with 10 or 20 or so channels of FM music and a sizeable price tag. How pointless is this? Woud so many channels ever be fully supported in anything but a musicians' package? I don't think so.

It might be hard for many PC users to appreciate what is being said, as you really have to hear some of the quality sampling produced by a four channel Amiga. True, the Sound Blaster does have a sampling channel, but this alone is not enough to support games.

So to finish, I say get rid of the FM music channels and introduce eight channel sampling. I hope there are many readers out there who share my feelings.

Chris Thompson
South Woodham Ferrers
Essex

No problem

Concerning the running of Wing Commander 2 on an Amstrad PC 2386: I have a similar machine, with Wing Commander 2 up and running, including the extra speech disks, and Sound Blaster board installed. I have had no problems with this set-up (apart from a severe lack of hard disk space!).

With DOS 5.0 installed in high memory, along with the mouse driver, I am able to get 587K free in base memory. The Config.sys file has

```
FILES=15
BUFFERS=8
FCBs=20,8
```

I do not have any TSR programs in my Autoexec.bat file and am using EMM 386, supplied with DOS 5, to manage the expanded memory.

I see no reason why WC2 should not run on Robert Foulger's PC2386 if his set-up is similar to mine.

Leigh Caddy
Uxbridge
Middlesex

Help the aged

Help! Are there such things as 'hint books' or 'help lines' to crack some games? It may be that the average 10 year old can complete modern role-playing games between meals but as a 36 year old father of two I frequently find I am not able to get the best out of a package.

My particular problem at the moment is Bard's Tale 2 — the Destiny Knight. After much hard work I have explored large parts of the kingdom and found two parts of the Destiny Wand. I am, however, stuck in several places.

Firstly, in Dragoth's Tower, I have found my way to the fifth level and answered the first four of 'speak the ten in sequence and find the death square'. These are 1) water; 2) lie; 3) slave; 4) gold. However, I cannot even find a clue to the fifth word and, although I can guess at numbers six to 10, cannot even start to test them out.

In the Maze of Dread, I have found the death snare, but no solution to the 'value of rote actions'.

In Colosse, I cannot find the two things that will split the rock. I am convinced that they have something to do with 'harsh words' and 'feather' but clearly the author of this game was of a different mind.

I never did find anything in the starter dungeon. Did I miss out?

In conclusion, this game is getting me down — please help.

Martin Gower
Basingstoke
Hants

PC review REPLIES

There are indeed hint books and helplines for most of the well-known PC games, and Electronic Arts, UK publisher of the Bard's Tale series, is one of the more active companies in this area. Try EA's customer support service on (0753) 546565 for help over the phone, and they may be able to send you a clue sheet as well.

Expensive rubbish

Why are PC games so expensive, when some of them are a load of rubbish?

I've just recently sent off for Space Quest IV which cost £27.99, which was still quite a lot from the £39.99 in the shops. When I finally got it after six weeks of waiting (because of a printing error I had to send away for it again) I find it's only in EGA and that you have to send off for the VGA version to somewhere in the USA.

But that's only if you have a high density drive — which I don't. So I had to put up with it and because of that I may never trust any software company again. When playing it I thought it was all right, but I would have enjoyed it more if it had been in VGA.

At the moment I am saving up for a soundboard, maybe a Sound Blaster. I only hope it's as good as you say it is.

S Edworthy
Bordon
Hants

PC review REPLIES

Normally with Space Quest IV, you would buy the EGA or VGA version, and state which you required at the time of purchase. Rather than sending your EGA version to the USA, you can send it to Sierra's UK office at Unit 2, Technology Centre, Station Road, Theale, Reading, Berkshire, RG7 4AA, and they'll replace the EGA game with a VGA version.

Misleading cases

Having programmed, to differing degrees, both Amigas and PCs, I would like to add my worms to the can. I feel that Neil Gorin's letter, published in PC Review Issue 2, made some particularly pithy points which no-one has since attempted to address.

The first concerns software publishers' complacency with both package labelling and programming. Labelling is generally very misleading — all too often only a clock speed is quoted, which is next to useless. A package may say "8MHz machine or faster recommended". An 8MHz what? 8086? 80286? 80386? It makes a dramatic difference.

Then there's the misleading "required" or "recommended" bit. They lie! For instance, on Space Quest IV, the VGA version, it says, "286 performance or better is required". Being a devoted fan of the series I bought it, and it worked playably on my lowly 8MHz 8086 machine, albeit rather slowly at times. Even PC Review has made the mistake mentioned above, or has neglected to warn us of hideously slow games.

Now, on to Amigas, and a demonstration of programmers' complacency. The Amiga, in terms of clock speed and processing efficiency, has little advantage over, say, an 8MHz 8086 (just like mine!). However, its big advantage is the blitter chip, which allows it to pump loads of sprites (spaceships, little figures, etc) to the screen at a hell of a rate.

This lets it zoom along with games like shoot 'em ups, which are graphic-intensive, but not very demanding on the processor. PCs don't have dedicated blitters, which is why so many games run so slowly on 8088, 8086 and some 80286 processors. The processor has to dump sprites to the screen itself rather than rely on another chip to do it.

But here, I'm talking about polygon-based things such as flight sims and the like. Here, the Amiga has no advantage, because for the average sim, a sprite device is little help for drawing the funky little triangles and such needed to make up the graphics. But still Amiga flight sims are faster and smoother than conversions on the PC, even on some 286s. Amiga pro-

grammers know the limitations of their machine, and can cater for them very well, but PC programmers are reluctant to optimise their code for us XT users: this is even true of many European software houses.

I am not mistaken, an 8MHz 8086 machine is easily capable of Amiga-smooth polygons. My proof of this is a Digital Image Design game: F29 Retaliator. On my 8086 machine, its smoothness was the stuff of legends. Now, PC programmers, I challenge you to get coding — seriously.

Adam Moss
Stowmarket
Suffolk

PC review REPLIES...

I'm sure John Hastings, whose letter was published in Issue 6, will be interested about F29 Retaliator — he was having difficulty running it at all on his 8086, and hopefully, he and Ocean have this sorted out by now.

Making a play

I am interested in buying an American Football game for my PC but I am not sure which would be the best game for me. I already have Mike Ditka Ultimate Football, and the games I am considering are John Madden's Football, Joe Montana's Football and NFL Pro League Football.

Please could you give me details on the graphics adapters needed, size of playbook, if there is a playbook editor, whether you coach or play, if there is a continuous season play with college drafts, trades, other features and generally which is the best for someone who is big fan of the NFL?

A Hayton
Grantham
Lincs

PC review REPLIES...

It's doubtful whether Joe Montana will be released on the PC in the near future, and EA's John Madden game is no longer available. However, John Madden 2 will be launched for the PC later this year. NFL Pro League Football is very much a strategy simulation, with full game plans, etc. Very detailed, but not much visual action. Our American Football correspondent tells me that you already have the best arcade-orientated PC game around in this field.

PC Review welcomes letters on any subject under the PC sun. The editor will chop them to fit the space if need be, and we'll assume letters are to be considered for publication unless you specifically state otherwise. Send all correspondence to Letters, PC Review, EMAP Images, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. If you have access to CIX (Compulink Information Exchange) you can send your letters to our mailbox – our ID is pcreview. Star Letters win software prizes!

ON THE SPOT

PC Review arranges regular visits to the UK's top PC companies, taking with us a selection of readers who have filled in the form below. This gives you the chance to talk to various movers and shakers within the industry: interview them, ask them about their PC plans, how they design, write, produce their games, why PC games are so expensive (you might as well, everyone else asks that). The exact nature of the visit, and the degree of formality, depends on the companies concerned, but you usually get a chance to see some sneak previews of forthcoming products, meet the programmers, and have a guided tour of company HQ.

A full report of the visit then appears in a later PC Review – useful for those who didn't go, because they'll read the answers to the questions *you* asked. In other words, the issues which you, the readers, care about, rather than we think is important.

In our next issue, you can read about the first trip to Sierra's UK headquarters. After that, we'll be setting up our visit to Microprose, so get your application in pronto if you want to be considered for this.

Also, we've added a new company to our list this month. Lemmings' publisher Psygnosis, which is also heavily involved in CD-Rom development for the PC, will be hosting a PC Review On the Spot later in the summer. If you'd like to visit Psygnosis in Liverpool, fill out the form without delay (if you've already applied for another visit, feel free to re-apply for this one).

If you want to take part in an On the Spot visit, fill in the form below and send it to: On the Spot, PC Review, EMAP Images, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

Note: we don't take very many people at any one time, so that if selected, you'll have every chance to have your say. Because of this, the places get filled quickly, but we'll be doing return visits to all the most popular companies. If you miss out the first time round, sit tight, because another visit to the same place will come up and we don't throw your forms away.

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Age: Under 16 ❑ 16-25 ❑ 25-40 ❑ Over 40 ❑

NB If you are under 16, please get your parent or guardian to sign this form as well giving their consent for you to take part.

Which company would you like to visit?

Domark ❑ Virgin ❑ Mindscape ❑ Microprose ❑ Bitmap Brothers ❑ Psygnosis ❑ Other (if applicable)

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PC Review May 1992

PC review QUERIES Q&A

Bemused, bothered or bewildered about the mysterious workings of your PC? Confused by hardware options? Stricken with software seize-ups? Share your problems with Q&A's Mike James and he'll endeavour to help.

Upgrading an Amstrad

I have a 2086/30 Amstrad PC with an old 8086 processor running at 8Mhz. My friend has a 386 processor and is thinking of replacing it with a 486 processor. Would it be possible for me to buy his old 386 processor and replace my 8086 processor with it? If not, what would be the cheapest and easiest way to upgrade the speed of my machine?

Andrew Cooke
Wokingham
Berks

It isn't possible to replace just the processor in a machine, you have to replace the entire printed circuit board — usually called the motherboard or the mainboard — that holds it. This isn't a difficult job as long as the machine in question is a standard clone. Unfortunately the Amstrad 2000 series doesn't use a standard motherboard and so in this particular case the answer is no. I suppose that in principle it would be possible to change the motherboard in a 2086 but it wouldn't be easy. How best to go about upgrading your machine is the sort of topic that could occupy a debating society for a few weeks. You could try and plug in 386SX co-processor card but you would need to find a good price to make it worthwhile. Personally my preferred solution would be to sell or part exchange the whole machine.

Need more drive letters?

In October 1991, my dad bought an Amstrad PC 2386, with VGA graphics and a 65Mb hard drive. It also has 4Mb RAM. It runs at 20 Mhz, using MS-DOS version 4.01.

When we installed the hard drive (type 1) we were not sure if we wanted one single drive or a few drives, so we made it one single drive, drive C:. Now however, we are really needing a drive D:, and possibly a drive E:. Should we use FDisk to partition the drive? Does using FDisk cause data already on the drive to be lost or only part of it?

Also, we own a few games that require 640K to run. The computer claims to have 640K, but none of the games will run. I have tried removing TSRs and using the Setup program to alter the memory but without success. Any suggestions?

My dad is thinking about buying an upgrade from MS-DOS version 4.01 to version 5.0. Would this help my memory problem? What are the general advantages of MS-DOS 5.0 against my current version? My dad is also thinking about buying Windows 3.0. We already have Windows 386, but most of our programs that require Windows ask for a newer version. Is it worth buying Windows 3.0 now or should we wait until Windows 3.1 comes out?

Andrew Self
Solihill
West Midlands

Let's answer your questions one at a time. I can't really understand why you want to split up, or 'partition', in the jargon, the hard disk drive — most of the rest of the computer using world has been trying to avoid doing this for years! MS-DOS 4.x and 5's great advantage is that they allow you to work with almost any size of disk as a single logical drive. Partitioning is something that was forced on users because of the 32Mb upper limit imposed by MS-DOS versions 3.x and earlier. Partitioning wastes disk space and is an irritation. I can only guess that you want extra disk drive letters as a way of dividing up the storage for different purposes. The correct way of doing this to use directories and sub-directories. If you insist on using drive letters then you can assign any directory a drive letter using the Subst command. Look it all up in the manual for more details but whatever you do don't re-format or re-partition the drive — either operation loses all of the data already on the disk.

The second part of your question about lack of memory to run games is probably related to the use of MS-DOS 4.01 which is a well-known memory hog. While I can't be 100% sure that 4.01 is your problem I can be 100% certain that changing to MS-DOS 5 will release more memory for use by applications. This has to be worth the cost and trouble.

The third part of your question is very easy to answer. With Windows 3.1 only a few days away and given that it has quite a few advantages over 3.0 it is certainly worth the wait. Mind you, if you can find a bargain copy of Windows 3.0 then buy it because 3.0 is better than no Windows at all and the machine that you have runs it very nicely! PS: Microsoft has just announced its upgrade policy for Windows 3.1. If you bought 3.0 on or after 2nd March then you will get 3.1 as a free upgrade. Other Windows 3.0 users will have to pay £45 for the upgrade.

Power-hungry

I have noticed that with the increase in technology in games software, for example, Ultima VII and the new Strike Commander, that a more and more powerful system is required to run at a suitable pace.

I have had an Amstrad PC2086 running at 8Mhz for over a year now, and although I have found very much enjoyment in games such as Chuck Yeager's Air Combat and Jetfighter 2 I am seriously lacking the power and speed to be able to run these games at full spec. For this reason I have decided to upgrade my machine to a new powerful 'work-horse' . After a lot of inquiring and comparing I have decided on buying either a PC3286 or, preferably, a PC3386SX running at 20Mhz . Yet I am still worrying who

Picture conversion

I need to convert various picture file formats between several of my applications. These include PCX, TIF, Compuserve GIF, and CGM metafile. Could you possibly recommend a utility (preferably Public Domain) that will do this for me?

Christopher Leighton
Pinner
Middlesex

Converting between different file formats is a common problem and there are a number of packages that will do the job. The best known and most comprehensive of these is probably Hijaak V2.0, although personally I prefer V1.0 because it doesn't have as many bugs. The only problem with Hijaak is that it is expensive at about £100. Fortunately the types of files that you want to convert between are all bitmapped formats and these are simpler. I can't find any Public Domain converters but there are a number of bitmap converters available as shareware. None do precisely the range of conversions that you want. Graphics Workshop (PC-SIG disk 2277), claims to convert between IMG, .TIF, .PCX and .GIF formats and even deals with .IFF and .LBM Amiga formats — but not CGM. By the way, CGM is an uncommon format to use for bitmapped images. Disk 1125 from ShareWare Marketing offers a number of format converters including .PCX to .GIF but there's not a .TIF converter in sight.

If you've got to spend money on the problem then one trick that is worth considering is to have a look for a drawing or painting program that reads and writes a variety of formats — for example GST's DesignWorks (£149) — and so you get file conversion as a by-product.

would give me the best deal when buying a machine. I am currently looking at Amstrad or Ness systems, yet I would like your help in finding me a suitable company to sell me a 386SX at a competitive price. Who do you think would be the best value and will these systems still be up to standard in days to come when software requires more power?

Glenn Walker
Gerrards Cross
Bucks

I have to agree that there seems to be no end to the amount of power that modern games demand. And with ever increasing video resolutions, let alone virtual reality just around the corner, it isn't likely to get any better! At the moment I am recommending a 20Mhz 386SX as a suitable starter as a games machine for anyone who can afford it. Anything less and you will need to upgrade in only a few months! Even if you do buy a 386SX the demands are rising so rapidly that you might write the same letter this time next year!

When it comes to recommending a manufacturer this is something that needs more than an answer in a letters page can deal with. What I would say is that long gone are the days when Amstrad made machines that were miles ahead in terms of price and performance. They are still good machines but then so are many others. Buy the fastest machine you can afford but, given that there is little to distinguish one machine of similar specification from another, you will do well to shop around (or rather scrutinise adverts) for a good bargain.

Portable joysticks

I have recently purchased a PC 386SX/20 notebook. While I primarily use the PC for word processing, I do also use it for leisure. Many of the games presently available can only operate with a joystick and not a mouse.

As my PC does not have a games port can you tell me where I can buy a serial joystick at a reasonable price?

H Frydenson
London NW11

I'm afraid that I don't know of a serial joystick suitable for a portable at any price! The difficulty is that the most common sort of mouse uses a serial port and any serial joystick would use the same type of interface. Therefore any game that refused to use a mouse would also refuse to use a 'serial' joystick.

There are a number of different mice that are suitably modified for use with a portable and so behave like joysticks or trackballs but they will not be of much use for use with games that ignore mice. As PC joysticks need a games port and to add a games port you need an expansion slot I don't see any way that you can add a joystick to your portable. But perhaps there is a manufacturer or a reader who knows better ...

Memory jogging

I own a PC Amstrad 3386SX Super-VGA 20Mhz and I was wondering if you could help me with a few queries regarding upgrading it to run the latest in games software. Falcon 3 requires MS-DOS version 5 to run and also 2Mb of memory, let alone the optional maths co-processor. Wing Commander, on the other hand, requires extended memory, or is it expanded? Excuse me for being a bit thick, but I bought my PC purely to play games, therefore all this extended and expanded is too much to follow. Are some of these ways of upgrading the same, or do they each have their own separate functions? As some of these items are very expensive, I would appreciate any information you can give regarding this matter.

Ron Pratt

As you have a 3386SX you don't have to worry much about the difference between expanded and extended memory. The reason is that the normal type of memory that you fit to a 286 or a 386 is extended memory but it can be converted to expanded memory if necessary by using nothing but software. This is a trick that isn't available on anything other than a 386. The software that you need to do the magic comes free with MS-DOS 5 and it's called EMM386 — just look it up in the manual. This, plus other advantages, make it worth upgrading the memory the memory of your machine and changing to MS-DOS 5 as a job lot. If you don't fancy upgrading to MS-DOS 5 then you can buy either QEMM 386 or 386Max or any of the other 386 memory managers on the market.

Editing graphics

I have three questions I need to ask you

1) I am having a lot of trouble saving and loading graphics from Quick Basic 4.5. BLoad does not work for EGA and VGA and saving a picture pixel by pixel takes ages. How can I save a whole or part of a screen in EGA and VGA from QB 4.5 or Pascal?

2) Is it legal to edit graphics from commercial programs for personal use (not commercial); if so, how do I do it. I had hoped to convert them to .PCX with Grafwork, but it did not recognise files from Prince of Persia or Iron Man or any others. Could you please tell me how to edit these files?

3) Can I program the Sound Blaster from Quick Base 4.5 or Pascal?

Hugo Elias
London N1

BLoad will not work with EGA or VGA modes, because the video memory is paged and you cannot get at all of it at once. In principle it should be possible to switch each page into the address space and BSave it to disk. Restoring the image to the screen would just be a matter of reversing the process. There should be a suitable sub-routine library somewhere to do the job but I can't find one! Perhaps a reader knows better. As an interim measure why not try GET to read the entire or partial screen into a large array and then write the array out to disk. Reading the array back in and then using PUT to restore it to the screen works almost as fast as BLoad. (Look the commands up in the manual, the description there is OK!) The only problem is that you might not be able to create a large enough array to store the entire screen, if you are working with the highest resolution screen mode. Here you can use GET to store the sections of the screen in the largest arrays you can create. Again the image can be restored to the screen using PUT but this time one PUT per screen chunk. You can recover the memory used in the arrays by the Erase or Redim commands.

I can't comment on the legality of using or editing images from games but if they are only for personal use I doubt if any laws are being broken. On the technical side though I doubt that you will have much luck with any standard graphics file format convertors on the graphics files in the majority of programs. The reason is that the programmers often invent their own file formats and embed them in code. As a result even if you managed to find a way of editing the graphics in one game, I doubt that the same method would work with another one.

One solution is to get a screen dump program like GEMCAP (Shareware) or Pinch and Punch. This would allow you to capture a screen display and store it on disk in a standard format. The only problem is that many games go to some trouble to stop you from taking screen dumps.

The answer to programming the Sound Blaster is that you need a sub-routine library that controls the card. WestPoint Creative (0743 248590) has a developers' kit which includes technical manuals, examples and subroutine libraries for QBasic 4.5, Turbo Pascal, C and assembler. This is available in both a DOS and Windows version but it is only worth considering if you're serious because it costs £69.95. There is no sign of a low cost 'beginners' type sub-routine library,

Don't forget if you have any answers or ideas to help other PC Review readers, drop us a line and we will publish them. Send your letters to Q&A, PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. If you have access to CIX, the Compulink Information Exchange, you can send your query to us there – our ID is pcreview.

Sir Clive goes green with black box

Sir Clive Sinclair is back. The man who enticed us all to buy miniature black electronic devices in the 70s and 80s, before going way off-beam with a large grey tricycle, has moved back into familiar territory with his electric bicycle.

The Zike (Zike is apparently somehow meant to stand for zero-emission bicycle) is battery-powered to the extent that the most economical way of riding it is to pedal as normal until you get to a hill, then switch on the motor to help you up the slope.

The Sinclair signature comes in its absurdly tiny black wheels, and the ingenious use the Sinclair team has made of technology, with lightweight batteries and motors that will fit unobtrusively into the front cross-bar.

Your intrepid PC Review correspondent test drove the Zike on a perfectly flat, carpeted area of the Olympia exhibition hall, which is hardly pushing it to the limits. All I can really tell you is it feels a lot less dangerous than that wretched C5.

The Zike's best advertisement came from Sir Clive himself, in an unwitting aside. Extolling the comfort and ease of use of the bicycle, he added, "Anyway, I can tell you that everyone who uses it always gets off the Zike smiling."

Dangerous Dali virus due to strike

Widespread publicity about the Michelangelo virus ensured that damage in Britain was kept to a minimum, even if South African companies and the Uruguayan army weren't so fortunate. The virus, which scrambles the computer's hard disk is triggered to run on March 6, the birthday of the original Michelangelo (see News pages, this issue).

Virus-writers aren't normally considered a culturally-sensitive bunch, but obviously Great Art affects them as much as it does the rest of us. We at PC Review are particularly looking forward to encountering the Monet virus, which makes all your screen colours run together, and the Dali virus, which will turn your hard disk into a loaf of bread.

All an allusion

Product placement in the movies is rapidly becoming big business, but Nintendo seems to have moved on to a further refinement of the art: allusion placement.

In Hudson Hawk, which will surely go down in history as one of Holloywood's more notable flops, Ocean has followed its now traditional line of advertising its Hudson Hawk computer game at the beginning of the video version. Thereafter, any links with Ocean are severed entirely as Nintendo takes over.

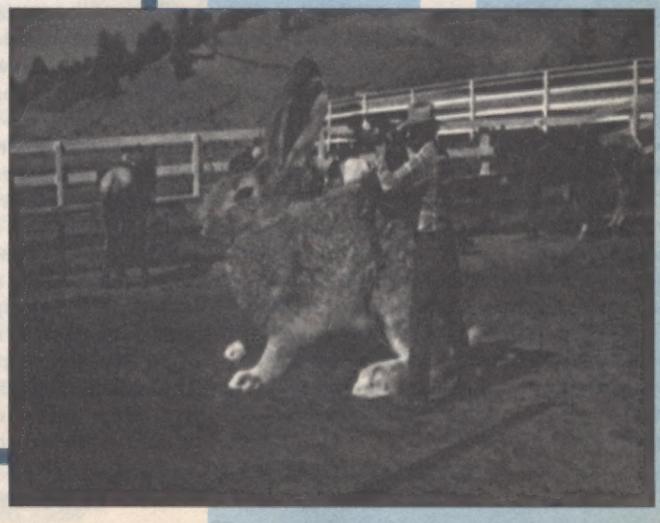
After ten years in jail (or was it the set of Moonlighting — difficult to tell), Bruce Willis finds he has missed out on all sorts of inventions and devices of life in the 1990s, such as, well, Nintendo, the NES, Nintendo, and er, that's it really.

Not, you understand, that you actually get to see the Nintendo products — they're simply talked about and as if to ram the point home should you have been nodding off (not unlikely in the middle of Hudson Hawk), two of the villains in the piece are called the Mario Brothers.

Magazine sans frontières

This issue of PC Review marks our second foray into the spirit of 1992 and post-Maastricht unity with a pan-European edition of the magazine. While most magazines distribute a limited number of original English editions abroad, this issue is also available in the countries concerned in French, German, Italian and Spanish. Thus, as you read about the delights of the Disney Animation Studio and the complete guide to flight simulations, somewhere in Milan, Munich, Madrid and Maubourguet someone is doing precisely the same thing.

This offering is from John Houghton of Essex, in the Plane Sailing competition. The rabbit is apparently called Big Jack. I don't think there's really much more that needs to be said on the matter.



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